# COMPUTERWORLD

## Users willing to ride Microsoft juggernaut

By Neal Weinberg, William Brandel and Stuart J. Johnston

rofit growth at Microsoft Corp. is slowing. Delivery of major products is backing up. The U.S. Department of Justice is closely watching the company's competitive

Yet no company today compares to Micount which dominates nearly every market it enters. Pewer still have bad the vision or

the broad agenda of Microsoft Chairman Bill For information systems managers, Microsoft's impressive growth as an upstart PC soft ware company is no longer a passing novelty. As the vendor strides into the role of major busi-

pess software provider, it is also embarking on ventures such as on-line commerce and bone banking software. So something bas to give. And it appears to be

For better or worse, the relationship IS managers have with Microsoft is changing. According to an exclusive Computerscorld survey





Bose: 100151

cation of 40 that had

undergone disaster

There was also a lot

missing For instance,

there was no change

control, no develop-

ment methodology, no

project discipline, po

career development process and no formal

Since then Fager

has imposed some de-

test procedures

recovery testing.

tional shared-hub

based ATM networks of the fature sources. close to the commany Synthesis is Cable tron's response to

Cisco Systems, Inc.'s

## New switch hits

Cabletron blueprint sketches out ATM future

Ry Laure, DiDio and Stephen P. Klett Jr. both of which rolled out just year. After nearly a year without a major prod net announcement, Cabletron Systems. speed Asynchronous Transfer Mode

Inc. next Monday will unveil its highbipeprint architecture. The move is experted to unleash a Bood of related offerings in the next 18

The new Cabletron architecture — code named Synthesis will provide the framework to migrate coatomers from tradi-

and router-centric networks to the virtual switched and cell-

Labov Clinic's Rick Graham Stand-

The Synthesis product suite will pro vide users with scalability and a direct micration path to 156M bit/sec. OC-3 ATM. It will use Cabletron's Secure Fast Packet Switching engine when it becomes evalleble in the third quarter, the

Networks, Inc.'s Baysis architecture

First in a series of Synthesis products will be the PCV-1996 stand-slone Ether net switch, slated to ship next month. The switch introduction lowed by several ATM switches and mod

ules for Cabletron's high-end switching hob, the MMAC-Pins. The forthcoming

ATM products are based on Cabletron's

### Microsoft, page 28 Dictatorship 'insures' CIO's turnaround plan

By Julia King

Turnsrounds require That's the No. 1 lesson Bill Enger, chief information officer at

Community Mutual Insurance learned after one year at the beim of what

was arguably one of the most slipshed information systems or ganizations in the

nity Mutual in January 1994, payroll was the only production appli-

Bill Eager: Tough-love management cuts

cidedly heavy-banded reats, boosts IS status 18 ground rules at the

surer. No one in IS can now spend Dictatorship, page 16

When Eager arrived at Commu- \$2.3 billion Cincinnati-based in BEXERJFTERRESSEESSEES 5-DIGIT 48103

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### Kodak snaps up portables By Julia King

Hoping to improve a so-so custom er service record and boost leg-

singsales force productivity, Eastman Kodak Co.'s second largest division is untethering its salespeople from their desktops. In May, Kodak's Professional & Printing Imaging Division will begin rolling out notebook comput ers to about 230 salespeople. They

Out of focus Last week, Eastmer Kedak reported a 91% mit ea Sus million from corporate databases using home-based PCs. in the past, Kodak salespeople

have been handicapped by a lack of information about the individuni customers who use their products. This is because the division sells primarily to distributors, processing labs and print and graph ics shops, explained Jim Neitarh

### Intel distills mobile strategy Ry Michael Pitzerenld

"Lower price, more features" may sound like a beer commercial, but intel Corp. is brewing up a Pentium strategy designed to make this hap-

pen in the notebook market "It's going to be a bonanze out there," pre-dicted Mike McGuire, an analyst at Dataquest, Inc. in San Jose, Calif. Other industry watchers agreed that intel's push into the mobile market will mean higher-powered products at lower

"You're going to get a definite step up in tech-phorical advances for notebook users, and

said Dean McCarron, an analyst at Mercury Research in Scottsdale, Aris.

"That is really good news. Now you don't have to make the trade-off of lowing all your work at work," said Joseph Awe, director of strategic technologies at PECO Energy Co. in Philadelphia. He was particularly pleased with

the chance to get better performance in the \$3,000 to \$5,000 potebook range. In response to exploding growth in the ne book market, Intel is making a concerted effort to bring its mobile chip development in line with

Intel, page 15

Kodak, pagr 127



Finally.

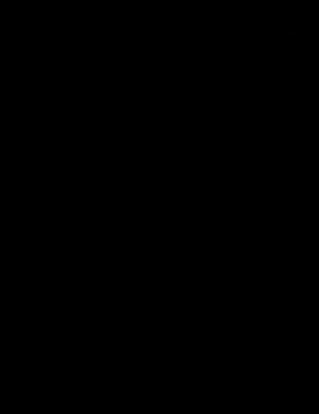




L**E**GENT

## The war is over. No more howitzer shells

coming at client/server groups from the glass house. No more client/server people lobbing grenades at the MIS staff. Not that peace is always as peaceful as you'd like it to be. Networks going down, bottlenecks popping up, people screaming about applications they can't get to. And a nasty feeling that nobody is really doing anything to help you with any of it. When, in reality, all of us at Legent are doing quite a lot. We've put together the most extensive set of industrial-strength, distributed systems management tools available. We've also developed an open architecture called XPE that lets our software work together across almost anything you can wire together, regardless of function or platform, from mainframes to UNIX servers to PC LANs. Which means you can manage your systems from the platform of your choice, something our customers tell us they're happily doing right now. It's not a silver bullet, but it can definitely help you do your job better. Besides, it's peacetime. Who needs bullets?





surprisingly few IS groups have radically recen sidered bow they do business. Analysis warn that spells trouble. See Re-engineering the Workplace, a quarterly special, on page 94,

WAs Borland sets set to launch its Delphi ellent/server development tool next week, developers say they are looking forward to the tool but are wary of the vendor's rocky fi-

nances Page 6 a IBM's outsourcing untt will provide information technology services to Denver-based Public Service Company of Colorado, and the utility will provide energy consulting to IRM.

Proc LA Despite bype and cuphoris, the information superhighway faces some tough burdles. a

#### government group says, Page 20 COMPUTER INDUSTRY

Oracle's applications group is in for big changes because sales bave not met expectations, Page 36

#### DESKTOP COMPLITING

•Vendors turn to specialized service partners in a bid to provide customers with better service at a better price. Page 42

\* in a test-drive of the Personal Oracle 7 datahase. Howard Millman finds the product is defined more by what it excludes than by what it includes Prose 42

#### WORKGROUP COMPUTING

\* # Videoconferencing announcements at Com-Net focus on price, interoperability. Page 53

#### **ENTERPRISE NETWORKING** · Encyclopaedia Britannica pursues an Inter-

w does your IS department compare with the world Premier son? Fill out the Premier son rey, and we'll send you a free report showing how ur operation compares with Premier soo averages may be published in a future Premier too Issue. Send a request on company letterhead to Psul Guite, Lidtor, Computerworld, 375 Cochinate Road, Framingham, . 01701 or E-mail to survey@cw.com.

net strategy to get its reference books more widely dustributed. Proce 62

#### LARGE SYSTEMS

Digital customers adopt different strategies for sytting off his iron — but sometimes they

#### APPLICATION DEVELOPMENT

■ Late database and development tools prod-ucts force some users to turn to other vendors. while others employ work arounds Procest

#### MANAGEMENT

Compon sense doesn't abways come easily as Whirlpool can attest. It took a new first-class Customer Quality Information System to reveal some design flaws. Page 90

What do job applicants exaggerate about the most? Hands-on experience and their impact on a project's ontcome. Page 104 •IS careers in the consumer electronics in-

#### dustry. Page 105 MARKETRI ACE

Success with personal digital assistants often means demanding high degrees of customiration from yendors but at a similicant cost Dage 116

#### COMMENTARY

#Charles Rabrock and Rill Laboris raise questions about the real-life risks on the laterpet. Pages 8 and 40

John Gantz warns managers to factor extra training and support costs into their plans for Microsoft's Windows 85, Page 41

 Roger Sobkowiak and Ronald LeBleau say managers must face the painful reality that some of their people can't make the transition to new technologies. Page 41

areho

See In Depth, page 101.

Company Index ..... Editorial/Letters to the editor ......Page 40 Feb. 3 Stock Ticker..... ...... Prove 125 How to contact Computerworld ... Page 128

#### Executive Briefing



Paper forms manufacturers find they are in a life-and-death struggle to break in to the electronic forms market. To survive, they must leverage information technology and become electronic service providers, using their experience with how their customers use forms Page 87

Users in mixed Lotus' Notes and CC: Mail environments wonder if they should upgrade to Notes rather than the client/server version of CC:Mail. Page 2

Bank of Boston is launching a \$30 million branch automa ect based on chent/server technology. Page 4. Meanwhile, Chase Manhattan Bank has rolled out a new trading floor with videoconferencing and birth-speed networking. Page 6

The Internet server market, a Unix stronghold, will be expanded in the coming months as systems based on Microsoft's Windows NT platform hit the street Page 15 IBM delays some aspects of its bigh-end tape drive and readies new versions of its CK'S (masseries processing monitor

Puney Liand 73

As Martin Marietta grows through merger and acquisition, its en-sincers are trying to deliver a more standardized user interface and application suite. Page 58

Banvan users are real fans of the technology, but they have to defend their choice in an increasingly Novell-centric world. Page 67 The times they are a-changing for application developm dilional, mainframe-oriented methodologies are seen as inade-quate for effent/server systems with their disparate processing esources, networks and middleware. So, users are either building their own or evaluating vendors' methodologies designed specifi cally for client/server development. Page 87

### The 5th Wave by Rich Tennant



### Users ponder switch from CC:Mail to Notes

■ Gently but surely, Lotus Dev Corp. is leading its band of followers to-ward the adoption of Notes.

The Combridge Mass Jacob compar denies it had unem in extend Notes and CC:Mail environments are beginning to wonder if they should upgrade to Notes 4.0 and Notes Mail instead of going the CC Mail client/server route

No're seeing enough convergence in CC Mail and Noses that we're considering converting to Notes [and Notes Mail] in the next couple of years," said Breat Stilley, an analyst at Oktaboma State University in Stillwater "The CC Mails vironment in closed, and we need to be able to integrate a voice-mail application on an Ericsson switch, which is easier in

"Looks like they're making CC Mail a way to migrate to Notes, and Notes Mail Iwill look like CC Mail." said Kevin Ames, a support analyst at Placer Dome Canada Ltd. in Vancouver. "We may even drop CC:Mail." Amos was referring to the user inter

face of the Notes 4.0 client, slated to ship by midvear, which will be similar to that of the unrelessed CC Mail 3 0 client. The CCMail 3.0 client will work in a client/server environment. On the back end the CC Mail server will be the same

no the Notes 4 Occarrer The change in the interface of the upcoming Notes 4.0 chent removes another stumbling block in the adoption of Notes

Mail, according to a user at a spark foods manufacturing company who repressed encinymity CC:Meil is easier to meners mittally

because of the learning curve with Notes" he said However as the number of post offices goes up, the administration mes up exponentially he added With Notes Mell administrators do not have to manage the post office.

ortant question Therefore, users trying to decide should ask themselves if the cost of murratmy to a client/server environment from a file sharing environment is justifiable, said David Marshak, vice president of Patriris Seybold Group in Boston. "As the

CC-Mail DBS file sharing post office

Notes CommServer or Notes Au server On client: CC-Mail 2.0

CC:Mail 2.0

As users ask for informamove to ...

Notes 4.0 client pie will move" toward Notes, he said.

But large-scale migration will not be a bed of roses, even for those who want the improved connectivity that Notes prowidos

Some companies have only recently in vested large sums of money in deploying CC:Mail. Julio Duran, manager of customer support at Florida Power & Light Co. in Miami, said his organization just

number of pages from 7 000 to 8 000 Moving everyone over to Notes is something the utility has considered, but "our needs are based on business reason. To deploy a Notes client, we need more resources on the client" workstation, Durso said. Current investment in CC Mail will cor-

tainly be a factor in a company's decision to migrate, although with more and more users asking for information sharing Notes makes sense "Rusiness units committed hir time to CC: Mail are unlikety to go to Notes because of the price change " said a user at a large commerried bank in New York

But Matthew Cain, a director of Meto Gruun Inc In Stamford Coon said price changes will prompt people to adopt Notes, Strategically, it makes sense for Lotus to entice users to use Notes because Notes offers a lot of the functionalty that Microsoft Corp. is promising with Exchange and Windows \$6. "In 1996, the CC-Mail client will become the Notes Evname official "Calmenid

However Julie Parris, a director at Lotus in Mountain View Celif anid Lean recently invested heavily in the CC:Mail file-sharing architecture, thereby showing its commitment to CC Mail. Although Lotus uses Notes ar the basis for its client/server technology, it is not nudging

people to adopt Notes We feel they'll go that way on their own, but we're not nudeing." Parris said.

## Notes product comes down in price, peo-Sun expands distributed net management

By Steve Moore and Jean S. Bozman

Counterpunching Hewlett-Packard Co's expanding presence in notwork management, SunSoft, Inc. last week appounced a set of integrated network and systems. management products that will give in-

formation systems manag ers greater control over distributed networks The Solution platform in. eludes 14 enterprise manareaest applications for

distributed Unio, and PC systems. Only Jour major products were new with this announcement, however (see chart). Pricing for some of the

products has not yet been appounced. Analysts said the key offering is Enterprise Manager, a distributed fault, event and performance management avetem marred to leave comos

Users welcomed Solutice's distributed functionality. 'We want to be able to con-(rot our environment from anywhere in the world at any time," said Runt S. Puri. senior vice president of global trading will come later this year with links to oth operations and technology at The Chase Manhettan Bank NA, which has Sun based trading systems. "We want the

Sexubility to distribute management But users also asked for multivendor

is a way to manage excluses that is GUI based, simple-minded and cross-plat form so I entitle do administration the Sun Solaris, without having to train prople" on moltiple platforms, said Jim

management capabilities. "What I'd like same way on [IBM] RS/0000s, HP/UX or Swannon, IS manager at CS First Boston

ment business on the systems side According to Inter

New in Sun's Solstice \$4,995

in New York CS First Booton is deplete. ing SunNet Managor and other management platforms, he added Muttivendor management capabilit

er vendors' net managers that exchange "key topology and event data," said Den nis Yaro, SunSoft's general manager of terprise management products.

Nancy Wong, manager of con and network operations at Pacific Gas &

Electric Co. (PG&E) In San Fran and she would like to see a high tevel of integration among Solution components While PG&E as using mainframe-orient ed antomation tools to stitch some elient/server tools together, she said, "we want to get out of the software develop-

> national Data Corp.'s (IDC) most recent figures on the network management market. HP's OpenView holds a market share of 28.6%, compared with Sun's 29.4% share with SunNet Manager and IBM's 10% share NetView/8000 With Solstice to sup plement SunNet Manager. Sun hopes to hold the high ground and colleges both IRM

and HP "The challenge for Sun is to get back in the position of being a priority platform for new application development," said Rick Villars, a director at IDC. Sun's independent software vendors ean now

seek enterprise sales in addition to do partmental sales, he added. Based on technology from NetLaba. tor, in Los Altos, Calif., the new objectoriented Enterprise Manager contains about 70% Sup code officials of Sup cold However, Enterprise Manager will first

ship as an OEM version, with evperal release slated for this summer And meny of the new Solutice-branded applications - including SolarNet PC-Admin, Jump Start and Backup - are versions of exlating SunSoft products, Sun said.

Ready to do battle SunSoft's move came shortly after HP

said the distributed version of its Open-View management platform would be do layed until mid-1996. "Last summer it looked like HP was ahead, but Son is back, and this is now a very strongly competitive market," said James Herman, a vice-president at Northeast Consulting Resources, Inc. in Boston.

This is an attempt by Sun to compete with a \$25 hillion company," said David Wu, vice president of research at S. G. Warburg & Co. in New York, "Sun's top titors are HP HP and HP

Villars said Sun's competitors cur reatly bold no advantage in terms of ap plication integration in their suites. "In a perfect world all of [the Soistice applinations) would be highly integrated," he said. "but the reality is that they are not. To counter eriticism that its manage

ent offerings are Sun-centric, Sun said the company plans to port Enterprise Manager to HP/UX. Plans are also in the works to port certain SunNet Manager ons to Windows later this year Adding PCs makes Sua's platform

ere appealing to multivendor sites 'I'm pleased to see Sun drop their al most-religious pitch about Unix being a major player for workstations to run apication elients on," said Mike Prince, MIS director at Burtington Coat Pactory Warehouse Corp. in Lebanon, N.H.

### The UNIX System Sort



### UNIX

#### PERFORMANCE



#### FUNCTIONS

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		PLANNER CWO 19
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YES	ON	20200
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UNIX has its advantages, but its System Sort isn't one of them.

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## Networking comes home to NEST

Don't look now but file servers and networks may be moving into your sours bedroom or besement Novell, Inc.'s Extended Networks Divi-

sion in Orem. Utah, will rejesse a software developer's kit for Novell Embedded Systems Technology (NEST) this week that will bring computer networkincrinto your home or even your car. The fortheoming NEST developer's kill

is another step in Novell's so-called "pervasive committee' strategy The NEST developer's kit will enable independent cofference random to embed NetWeen into any intelligent device, including autor hiles and home appliances such as micrownve ovens, VCRs, televisions and stereo receivers. Once these components are embedded with NotWare, they can be managed by a file server.

"I love it — the possibilities are endless. People will be able to tape movies. turn hurefar alarms on and off, set their heating or even start the even using simple file server commands," said Cheryl Currid president of Currid & Co. in Hous-

Lisa Woods, a technical support spe-

rialist at DataSure Management Systoms a Novell independent software yeadoe in Anchland New Zealand surroad It sounds very futuristic hul viable at the same time We're very interested in writing applications for the NEST" devel-

oper's kit. Woods said. The developer's kit will have great anneal for DateSure's clicat have which runner from one to 30 much on a single LAN.

Commuter's dream More and more users are commuting between their homes and offices and this is certainly a much sheeper alternative then having a bill-blown NetWare LAN installed in sour becoment "Woods said "Having this type of functionality at home will certainly make life more

interesting and easier"

Sources close to Novell said the company has already begun ship ping the NEST developer's kit to many of its OFM northern

This means that end users can expect to see enabling software packages based on NEST shipping in the next 12 to 18

Still, Currid and other independent coffeens developers tempered their en shows an earlier and beautiful and follow notine that the actual software is not yet

But the ability to use file servers to

could usher in a new market niche; the tiny-gree actwork or TAN Currid said The concetion is when not if such next, acts will be available," she said, "Conceptually. I'm in Novell's court, but realistically, I have to reserve judgment until

Currid noted that TANs have already begun to eatch on with Japanese com sumers. Many upscale apartment buildiags and hotels in Tokyo are already outfitted with keynods that let residents perform such everyday tasks as setting the temperature controls for heating and

air conditioning systems, starting the ov-One hig cavest to pervasive consumer etworking is cost

Pricing on the NEST software developee's bit was not available at press time but Currid said the cost of the software packages and setting up a TAN need not 'A 386 computer with a large hard

drive makes a marvelous file server," she said. "ia a small office or home network. Lympld defy assume to one any natices ble difference in response time between a 356 and a Pontium-based server." A Novell spokesperson declined to omment on any of the specifies of the forthcoming NEST developer's kit an-

ryan Vises users cope in a NetWare-centific ild. See page 63.

## Bank of Boston plays technological catch-up

Company launches \$30 million branch automation project Ry Thomas Hoffman

After years of successful expansion inta foreign exchange trading and private hanking products, Bank of Boston Corp. has decided to focus its energies closer to home, stafting with a forthcoming \$30 million branch ation project

And even though the \$39 billion (in assets) bank leads the New England consumer deposits mar ket with an 11% above several analysis said Bank of Boston will been to use its business sayry and technical wherewithal to withstand the encroachment of Bostonbased BayBanks, inc. and Hartford, Conn.based Shawmat National Corp

#### Stiff competitio

Bank of Boston "has been trompeting their market share gains, but BayBanks bas been the most innovative in applying techpology to the retail markets." said Laura Bank of Boston's Stuart, president of Stuart Research, a Cambridge, Mass., consultancy. 'That tomer service push doesn't mesn BayBanks' enstomers neces surily have the highest level of perceived brook's top spot survine but Bank of Roston and Shawmed are certainly playing [technological] catch-up.

For example, BayBanks last year introduced an L. L. Bean-style cutalog of banking products, and customers can call an 800 number to inquire about specific offer ines. Not to be outdone. Shawmot recently introduced interactive video kiosks in the Boston area that allow customers to talk face-to-face with specialized custom er services representatives over videoscreens, said Deborah Williams, an analyst at The Tower Group, a

Wellesley, Mass., banking and technology consultancy. Michael Lezenski, Bank of Boston's chief technology officer yeld the bank's customer service much will belo

It retain its top anot among regional banks. "It's elearly our intention to be the leader of financial services in this area." Lezenski said, "We believe Ithe retail workstatioa project] will allow us to deliver faster, channer and better services to our customers while driving our own internal efficiency. Deads of Readon will will out more than 2,000 intelli-

gent workstations to customer service representatives at its 300 houndess and telebenking own ters in New Earland. The bunk's effort, snearheaded by IRM, was designed to bring the environce term into a more value, and

The project is part of Bank of Boston's Customer Focus program, which launched last year to scope out and then satisfy customer needs, Lezenski said. At the core of the retail workstation proect is Bnakpro GUI, a graphical client/server retail banking package from Argo Data Resources Corp. in Dallas, Bank of Boston. which used to run a predecessor Arms nackage on its IBM 4700 systems chose OS/2 machines because the software was designed to ensity extract IBM CICS data

from its IRM FS/9000 Model 860 main-

frames at its Boston and East Providence R.L. date conters, and George Swick, infrastructure release manager at the bank

will help retain

Branchingout in the first phase of the 21-month project, Bank of Boston is evaluating the technical and business require-

ments of its branches and upgrading electrical wiring in those facilities. In July, the bank will begin upgrading its telecommunications network from analog coancetions to digital 56K-byte circuits, fullowed by a rollout ul Novell, Inc. NetWare LANs and 2,000 IBM PS/2 worksts-

tions. A decision between IRM and Compan Com Corp. servers is expected soon, bank officials said. The bank's branch applications will then be custor ared and deployed in the first balf of 1998. Swick said Despite BayBanks' and Shawmut's shrewd marketing tacties in New England's consumer hanking circles. most analysis applied Bank of Hoston's branch suto-

"If you look at the landscape today, less than 30% of the PCs in the banking market are connected to each other," said Richard Crope, senior manager of financial services at KPMG Pest Marwick in Los Angeles, "For all intents and nurmoses banks are not really harnessing the names of this radically desented bed amounting model, which permits for the manipulation and custom ization of data."

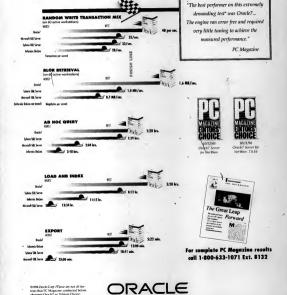
### Corrections

Due to an editing error, several words were left out of the third seatence in a front page story "EMC recests RAID," CW, Jan. 30] on EMC Corp.'s mainframe RAID plans. The full scatence should have read: "The hybrid is hased on a seldom-used implementation of the redundant stor-

see technology in the Jan. 23 in Depth section, "Internet tough rys," the photo caption should have read: First Chicago's Internet team members (from for to right) are Mark Gallagher Paul Stephenson and John Gitchrist

The reference to Boole & Babbare, Inc. in the Jan. 23 issue under New Products should have referred to the company's Storage Division in Convers. Ga., not the San Jose, Calif., bendousivers.

### ORACLE 7 OUTPERFORMS THE COMPETITION.



01994 Oracle Corp #These are not all the tests that PC Magazine conducted before choosing Ocacle? as 'Editors Choice'

## Borland seeks big hit with Delphi tool

Ry Filmsboth Heichler

and Internatio mal, Inc. next week will launch ohl. a client/server develope es at the financially troubled company say is the

Whether the Scotte Valley Calif. company can rest already established competitors depends in large part on whether it can overcome developers' concerns about Borland's continued fiscal stability developers and upabusts and last water Divel products to rented by Dolphi include Powersoft Corn's PowerBuilder Microsoft

Corp.'s Visual Basic and Gupta Corp.'s SQL Windows. Users who have beta-tested Deiphi lauded the produet from a technical standpoint, eiting its full support for object-oriented features such as inheritance, polymorphism and epenpsulation. And unlike other visual elient/server development tools that have interpreted Innexame such as Visual Basic and PowerBuilder Delwho includes a mature-code committee that delivery factor

performance for applications. "The fundamental issue on everyone's mind that omes first is Borland's financial condition," said Brent Williams, research director for application development at Gartner Group Inc. in Stanford, Conn. "Vo Power Builder it's my tuneous that it's way different and much better to overcome the corporate [stability] is-

#### One up on Visual Basic

Up against the widely anticipated but delayed release of Visual Basic 4.0, Detphi will gain from bring "a prodnot that's been and our be cold today to a product that's

and CHARLESON would Zack Urlocker, Delphi's product manager, last, week confirmed that the development tool will be unjected feel 14 at the Software Development 36 conference at m noted storos by the end of the month, it will come in two flavors: a desktop version for Windows 3.1 -- priced to compete against Visual Basic and Powerfulder Deskton exemptly \$339 and \$895, respectively - and a client/server version that includes the Interbase datahave engine. That version will be priced aggressively against PowerBuilder Enterprise, which costs \$3,295, a

A 32-bit release of Delphi for Microsoft's Windows 95. Ducting develop

available last work

Son Francisco's Moscone Center and will be available anid. Phom noted that Borland's delay in adding our port for OCXs to Delphi will not be a problem for him However Christopher Ross, president of develope Artemis Allience, Inc. in St. Paul, Minn., said the wait could be an issue. "We work to long schedules, and we're thinking ahead to Windows 95," he explained. Ar-Borland spokeswoman said Pricing specifies were net

temis has used Visual Basic for prototyping, demon strations and production applications but will use Delpbi as the development environment for its biggest projects he said Ross saidhe expects Delphi to be faster because it is a com-

piled language, and it also has the true object-oriented design and programming capabilities that Visual Basic

Corporate developers using Visual Busic anid they are interested in Del. phi's object-oriented capabilities and native compiler technology. We will have at least an evaluation copy of Delphi as soon as it's re-

leased," said Dennis Hayes, a systems programmer at Glico-Harmony Foods Corp. in Santa Cruz, Calif. The in formation systems department has used Visual Basic for several years. "The real value of objects is reuse. and truly remarkle objects must support inheritance Neither VBXs nor OCXs support inheritance. I expect

Borland to get this right 'Delphi is certainly something we're taking a look at," said David Headley, a sensor software engineer at Polaroid Corp. in Cambridge, Mass. But he said rewriting his Visual Basic application in Delphi would proba-

bly be too costly, and he is easter for Visual Basic 4.0. edologies are needed for client/server applications. See page 8s.

Improved object-priented capabilities - Avadable in time february E Fenerted with delivery of and Windows NT operating systems will be delivered later this year after Windows 85 ships. Urlocker said

ing and Embedding (OLE) 1.0, OLE 2.0 and OpenDoc objects in applications developed with Delphi. Developers will also be able to write reusable object components At Jet Propulsion Laboratories in Pasadena, Calif. technical staff member James Phom found that neither

PowerRuitder nor Visua) Basic was powerful enough for a complex in-house project. But the beta copy of Delphi that Phan has been working with since December

The 22-bit Delphi will be available to beta testers be-

fore the Windows 95 release and will provide full can

port for Microsoft's OLE Custom Controls (OCX), he

added. The current 16-bit version will allow developers to use Visual Basic custom controls (VRX). Object Link-

## Chase Manhattan trades up to high-speed network

By Jean S. Bozman

While most of America was electing feetball teams on Super Bowl Sunday. electricians and technicians here were racing the clock to wire The Chase Manbattan Bank NA's new high-tech trading floor with high-speed networking and on-

By 7:30 n.m. on Jan. 30, 100M bls/sec. fiber-optic networks were in place, and the available bandwidth on Chase's trading floor had shot up (wentyfold, said Biti Schimoler, vice president of Chase. That extra elbow room on the data highway

alliones on server videoress ferencing for the first time Video will put real-time data feeds into context. It will allow brokers to New Her advantage York to talk to one another

about market conditions and about Buy/Sell stock recommendations. The video-system uses analog signal technology from Uni-Data and Communications, Inc. in Flushing, N.Y., over twisted-pair

ferencing rooms to speak with their counterparts worldwide.

For example, a pews tip that Chase transmits stobally from its traders in New York to those in London can create profite - even before television netmosks broadened the Unwidely "Heamething breaks and we can get that word out on a global basis in a few seconds or a

few minutes, that's a cou petitive adventage" said Rupi S. Puri, senior vice president of Chase's global trading operations and technology

#### For all its high-tech environ ment. Chase still relies on

buman contacts to make quick decisions. "Ideally, we Chase's Rupi S. Purl saus system giera all of our traders on one the bank a competifloor in sight of each other," Schimoler explained. That way a simple arm wave could draw attention

But to accommodate 450 traders in New York, two tradiperfloors are being installed here, connected by staircases. The second one is set to go on-line by month's end. Future plans are to extend

Tokyo with high-speed Ti links or multiplexed 56K hit/sec. leased Last week New York traders more to king their video "windows

for a test-drive, dialing up other New York eoilengues by dnubleclicking on a mean of user names. Twe got the video option, and I'm tratebing CNRC and CNN," said Benoit Jadoul, a vice president for foreum exchange marketing In all, there are nearly 900 Chase traders worldwide each coninned

for market data and another for applications. Chase's extra network bandwidth supports more elient/server applications, including Chaue's Electronic Book of traders' investment positions, which is passed around the world as each global office

heads bome at night Long, winding road

Chase decided two years ago to upgrade its trading floors in New York, London and Tokyo to speed internal communications. The cost of the New York upgrade alone was about \$100 million. But the investment in client/server applications.



analysis programs and high-spred per works is supposed to pay off in bigher hank revenue

All three of Chase's global trading Soors are built with Sun Microsystems Inc. workstations, Unix applications and lots of bigh-bandwidth communication Tokyo ent its new trading systems last August, and London will got similar gear by year's end. The bank's three-layer network uses 100M bit/sec. fibre-ontic "rings" to connect total Ethernet LANs all in a global network managed by Sun's



#### Micro Focus' Dialog System"

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descriptions and interactive demonstrations of Micro Focus Development Tools.



ness applications. With Dialog System, building a GUI can be as easy as the point





### The shape of things to come

ent backer activity on the internet reminds us that the internet is a prototype for our future communica tions, not the future itself. The Computer Emergency Reonse Team potice on IP appofing that was issued Jan. 23 reemphasizes that skilled backers can overcome

many unformately The men of internet internet overlooks that network's chartic nature, an attribute pioneering users hold in high esteem but IS vetors view warily The internet version of the information high-

way is public transit for con artists and compoter wizards wielding arious tools (see Editorial, page 40) So Cm not no sure the Internet will fulfill some of the plans envi seed for it. "Doing business on the 'net is likely to become stan dard practice as soon as a reasonably secure infrastructure for

network payments — and for authenticating the payer and payer is in place, "says A. Lyman Chapin, a chief scientist at Boll Beranek and Newman's Systems and Technology Division and former rman of the Internet Ar-

obliceture Board

Security for large-sum transactions, however, may be beyond the enpability of the present Internet Real security for hundreds of thousands of users requires real investment One of the few foolproof remedies is for the user to communicate a randomly generated num ber along with his password to a central server that hosts the same random

Fi 1	Security for large-sum transactions may be beyond the capability of the present internet.
Charles	Babcock

number generating pro cess. A match is made, and the paer is given access. But sufcguards, short of such an intricate system, can be folled by

The internet will bost countless information boutsones and small businesses, but it is unlikely that Citibank will ever conduct commercial leading over it Rather we are likely to see the birth of private perworks modeled on the Internet, with controls and secu-

rity guarantees that allow business to be conducted The shape of these future, private internets is still unknown, but the lines with which to build them are already being installed. Telephone companies, cable TV companies, railtrads and bridge and tunnel authorities - anyone who can command a backhoc and public right-of-way - are laying liber-optic cable to be leased someday to a network supplier.

I was surprised to learn about a large public utility that auto matically strings fiber-optic cable down the center ground wire of its transmission avistem. Unlike copper the fiber-optic rable was unaffected by the electromagnetic fields of the nearby transmission lines. The investment was minimal because the utility sireads owned the right-of-way. And after carrying the utility's telephs and data traffic. the cable had ofenty of canacity left over to lease

This surplus capacity will be stitehed together into regional and sasi-national private networks. Their configuration might vary from week to week or even day to day. Granted, extending the notwork that last mile into the heart of a community may be a long wayoff

Not everyone will have immediate access to these improvised virtual networks, just as not everyone is located near an interstate highway ramp. But the access will be extended further and further out, and there will be few unidentified hitchhikers hanging around the fringes.

When these private networks emerge, in many ways they will be antithetical to the spirit of the internet, with its free-for-all ways. They will charge for access, guarantee delivery of complex data and be closely monitored and managed. Interlogers and attempted security violators will have the door slammed in

Babesek in Computer reserief's technical collect His MCI Mail address is 575-2737

#### News Shorts

#### Microsoft faces another anonymous charge

Court review of the Microsoft Corp. antitrust settlement took a new turn last week as Silicon Valley attorney Gary L. Reback gave the court a secret document that allegedly shows more anticompetitive conduct. Reback's filing, on behalf of anonymous clients, said the document shows that Microsoft warned an unidentified company not to release an application for a altered one of its products so that it would be incompatible with the competitor's products. Microsoft said it could not comment on the unseen doc

#### Intel lowers chip prices, PC impact expected

The PC market should soon see another round of price cuts. Intel Corp.'s processor pricing for the current quarter dramatically lowers the bar on some of its hottest-selling chips. Some of the new prices, which went into effect Feb. 1, are up to 48% lower. For instance, the 75-MHz, 1486DX4 processor now sells for \$186 in quantities of 1,000 chips, compared with \$356 iast quarter.

#### Former Oracle exec drops lawsuit A former senior marketing executive at Orn cle Corp. recently dropped a \$30 million law-

anit arnises the company and Chief Executive Officer Larry Filison that allested wrongful fir. met herech of contend and other mistands Terry Garnett dropped the suit, which was filed in San Maten County Superior Court last Chatabar four days before he was arbeitaled to be deposed. No settlement or payment was involved, said Bay Ocampo Jr., Oracle's everal counsel Garnett could not be reached for

#### Chase IS exer moves to Prudential John Scientella, most recently execu-

president of technology and operaons at The Chase Man battan Bank NA in New York, has left the bank to take on a similar role at The Prudeatist laser

ance Co. of America in Newark, N.J. Scarutella, 45, will be replaced by Douglas Williams, who had been a senior vice president of the bank's technical services

#### MCI launches virtual network

cottons Corn soul last week it would launch a nationwide virtual network combining Synchronous Optical Network and Asynchronous Transfer Mode signaling. The voice data and vales virtual actionsk will onerate at speeds of 155M bit/sec, across MCFs. 2.5G hit/see, backbone petwork, MCI said it will boost its backbone to 100 bit/see early next year, with an eye toward supporting 40G bit/sec.speeds in the near future

#### Cisco CEO passes the reins John Moreride officially stepped down as

president and CEO of Claco Systems, Inc. heet wood: Engineer Evacuation View Pressie John Chambers took over as CEO of the St hilhon San Jose Colif interactworking compa ny. However, Morgridge will remain connected to the companyus chairman of the board.

#### HP to ship HP/UX Version 10

Hewlett-Packard Co, will ship its HP/UX Reloose 10 Unix operating system later this month, the company said. The new version boosts performance of workstations and servers by 10% to 20% and improves the sealability of high-end Unix servers. Users who request it can install HP/UX 10 right away, but a general release will follow in 90 days allowing third-party vendors to port applications.

Software pirate shut down Novell, Inc. and Microsoft last week reached an agreement that effectively shut down the so-called "Deadbeat Bulletin Board," which was illerally distributing pirated copies of more than 80 Novell and Mirmsoft software and bein-test packages. As part of the agreement the New Jersey-based tecnsave who run

#### the bulletin board agreed to pay \$25,000 in restitution to the two software giants. Apple's OpenDoc delayed

Late tast week, Apple Computer, fac. said it is ousking back delivery of its OpenDor document meneroment software by six months. The fiand securious will abin to developers in the



SHORT TAKES Sun Microsystems, Inc. last neek named SunSoft President Ed Zander president of Sun Microsystems Computer Corp., its \$4 billion hardware subsidiary... Packaged software was the fastest-growing part of the U.S. service economy, with sales up 250% from 1987 to 1982, the government reported. Robert K. Malik has been named chief information officer at Unum Corp. in Portland, Maine. He previously served as sonior vice president and CIO at Lincoln Nationat Corp. in Fort Wayne, Ind. . . . Dwayne Walker, the Microsoft executive responsible for appl cation development for Windows NT and Microsoft's back-office programs, is leaving at the end of the month to join an unidentified third-party application vendor.... IBM Credit Corp. in Stamford, Conn., agreed to sequire Chrysler Systems, Inc., a subsidiary of Chrysler Financial Corp. that offers PC asset management and leasing services.... The 100VG-Anvi.AN standard got a much needed lift last week when more than a dozen vendors announced plans to either ship or develop products based on the 190M hit/sec. internetworking technology Among the vendors were

HP, Chipcom Corp., Cisco and IBM

etting hitched with client/server appliyears of misery. Or a complete joy. It all depends who you choose as your partner

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## Survey blasts accounting systems, rankles IS

Ry Rosemany Cafasse Information systems got its butt kicked last week in an industry survey that

showed a majority of financial executives are uphappy with their accounting

The hig gripes include poor user interfaces, difficult data access, birth mainteer corporate comptroller at United

tween accounting modules and other Some IS executives fought back say.

ing they are willing to accept some - but not all of the esitisten You can't say 'I don't like this system and it's all your fault," said Keith Minak-

numericouts and lessy integration beba. "They are the owners and users of information if they don't like what they are exting then it is un to them to do something about it.

The survey, conducted and financed by Deloitte & Touche in New York and IMRS Inc., a Stamford, Conn.-based financial software company was based on 221 re-

lority worked at companies with more than \$1 hillion in sales. Altogether, the group uses a total of 2,634 financial programs most of which are still main-

frame-based. Marry there 60% of the respondents said compa my's moround soffware ine needs improvement while

less than 10% considered above roverner Gary Com-

passo, director of financial systems at Ames Department Stores, Inc. in Rocky Hill, Conn., said the criticisms would be valid if they concerned outdated legncy systems. In those cases. "the data was really locked up 1 think that was the evine

Ames uses a mix of mainframe-based General applications, front-end report writers and in-house-designed data accose took that run on PCv. "We bring information down onto the LAN to allow users to access it." Compasso said.

Working on it Other IS executives acknowledge that

tems do not measure up on important tasks such as data access and easy-touse front ends. But they said they are aiready working to address user gripes by adopting new technologies, particularly client/server financial systems that new vide graphical data analysis tools. Minaker said naces had a lecttimate

many older mainframe accounting sys-

beef with the company's mainframebased system, which they likeped to a UnitedGrain Growers is implementing a client/server financial system from

Dun & Bradstreet Software in Atlanta and Minaker said asers can at least see the potential of the new system. The software will provide graphical data analysis tools that give users functions they did not have with the mainframe system. such as a drill-down capability and the ability to work with financial data. Bob Culmer, director of informa-

technology at Phillips Cables Ltd. in Toronto, suggested that IS might instead be faulted for nol communicating clearly

"I think iS does a poor job of managing expectations at a senior level," Culmer said. "We can talk about capabilities but

not say how long it will take. That's where we all fall down." Yet Frank Garvey, a senior manager at Deloitte & Tonche who worked on the sur vey, said the results are not intended to

dumpon IS as much as show that there is still plenty of frustration on the user side "They know you can get [data], and they are wondering why they can't get it," Garvey said. "It's a frustration level of these financial people."

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## NT softwaré for Internet en route

Dr Ellis Broker

Companies eager to build their own offramps on the internet have bad tittle option but to employ Unix tools and servers.

That is about to change. Several vendors are impehing commercial World-Wide Web software that runs on Microsoft Corp.'s Windows NT Server, Analysts said this will onen the internet to premizations that want an interpet presence but either lack Universities or have been rejuctant to use existing NT-based Web software, which until

non-has been available only as from are The Web is a multimedia-capable intertive point-and-click interface. It is by far the fastest growing part of the internet. Among those offering NT Web servers

are the following: Process Software Corp. in Framing-ham Mass, which just week was the first off the blocks with its Purveyor Version 1.0 Web server for NT 3.5 and above. The initial release runs on Intel Corp. bardware and Digital Regionent Corn. Alpha RISC processors. It is priced at \$1,996 and will ship

in Manch

Mountain View Calif. which has said its own NT Web server will be out in the first half of this year. Netscape, which offers the popular internet browser of the same name has been selling two Unix servers alace last December

a O'Rettly & Associates, Inc. in Schustopol, Calif., which last week announced plans for an NT Webserver by May WebSite will include a graphical document manage are entired WebView a copy of Enhanced Mosais 20 and documentation Pricing was

### The absence jot NT Web servery I has held

people back," said Cheryl Currid, president of Currid & Co. a consultance to House ton. She described the pricing for the service bureaus that have sarung up exercishers with offers to build and maintain Webs as "all over the map." Users would probably opt to control these systems in-house if not for their lack of com-

fort with Univ The option of going with an NT interpet nerver "makes a hie difference for us because we're trying to migrate our county \*Netscape Communications Corp. in onto one standard networking and operat-

ing system," said Curtis Olliff, systems/network coordinator for Ambul Services for Alameda County Calif, which established an Internet presence less than B VEST SES

For Purveyor, Process licensed code from the European Microsoft Windows NT Academic Centre (EMWAC), which is coninnetion with Microsoft has been distribut. ing the \$150 NT Web server for the past sev-

eral months. The EMWAC code is freeware. Purveyor beta user Michael Donahne. chief technology officer at interWorld Corn in New York, said Process' commercialized product improves on EMWAC, no-

table with better security

Security is integrated into the file may ager ... so you can tag files that are svailable to groups or individual users," anid Donahue, who is developing a transaction processing system for InterWorld that will work with Microsoft's NT Server and SQL Samue InterWorld's Internet news and shopping service will go on-line in less than

The Purveyor NT Web server offers seen rity of pages, directories or the whole server based on user name, password or IP addence

#### Oracle weaves its own Web

Oracle Corp. plans to unvei a free kit this week for interating Web servers with Or-de 7 databases

ice in April. Users will ble to send documents to cle's own Web server in od Shores, Calif., to - Film Mont

#### Stratus to shift to PA-RISC line WordPerfect to roll out Internet tool set

By Phia Booker a WordPerfect will debut tomor-row a suite of tools for authoring hyperText Merkup Language (HTML) documents, the DNA of the Interpet's World-Wide Web.

Slated to be unveiled at the Degso '95 conference in Palm Springs, Calif., the tools - the first of which will be available in March - will let users collectively connert, neeros, author and browsn the internet

While there are plenty of free HTML editors out there, "we saw the frustration of people who wanted to use mainstream products," said Dave Harkness, produet marketing director for electronic publishing at WordPerfect. the Novell Inc. Applications

Harkness might also have ested user frustration over the delay of Microsoft Corp.'s Internet Assistant for Word. Announced last November at Comdex/Fail '94, the Assistant is now due out within a month or two, according to a knowledgrable bets usez.

WordPerfect will announce three different products: one free, one on CD-ROM that features an internet access sign-up, and one high-end system that can create cither HTML or Standard General-

The first of these, the free internet Publisher, will be ready at the end of February or early March. Novell officials said. It will include an HTML browser integrated with

ordPerfect and Envoy viewers. HTML Templates, Automated conreioo from WordPerfect to HTML a WordPerfect viewer and an Envoy "mini" viewer

The internet Publisher Pro. priced at \$49 and slated for April delivery will be shipped on CD-ROM and add a TCP/IP stack and an automated internet sign-up fes-

In Max WordPerfect will deliver the \$565 SGML Edition. This standalone product will include SGML and HTML templates, a layout designer and more sophisticated document management features. The SGML edition will ship with a

copy of WordPerfect's word pro-Analysts agree that the arrival of WordPerfect and Microsoft in the HTML authoring space is a

This is definitely one of the main things that will belp create the critical mass of content on the Web," said Frank Gilbane, prestdent of Publishing Technology gement, Inc. in Cambridge.

Honing to change horses in midstream with teed Markup Language (SGML) taking a bath, Stratus Computer, Inc. plans to begin moving users from its 1860 line of faulttolerant systems to a PA-RISC line it will naveil

The new Continuum Series represents a fourfold improvement in price/performance over Stratus' 1960-

based XA/R series according to Jigs Hot. less director of product marketing. Absoiute performance improvements are about threefold, according to the com-

Denv's internal benchmarks. The switch to the

PA-RISC 7100 marks the second time in three years that Stratus is changing its hardware horse in 1987, the common began migrating users from systems built on Motorola Inc's 690x0 processors to intel Corp. 1960-based sys-

620 72 Misz

72 MHz

Platforms keep changing

They seem to be changing platforms like they change socks," said Jim Johnson, chairman of The Standish Group International, Inc., a Dennis. Mass-based market research firm Johnson soul the 1860 line has "not been a world beater" and that the price/performer

improvements guined in the switch to PA-RISC might stimulate sales into a double-digit growth curve. Last year, Stratus owned about 15% of the \$2.8 billion fault-tolerant market a distant second to archrival Tandem Computers. Inc.'s 57%

hased XAR line encouraged vendors of loss costly high-availability systems, which do not provide the same degree of fail-safe perfor-mance as do fault-tolerant systems, to onrmech oo Stratus' turf. Despite the performance boost, the price range remains roughly the name on the Continuum as on the XA/R syn

tems (see chart).

1	PROCESSORS	Suots	Memotr	Pace	
į	1		138M bytes	\$90,000	
ı	2	6	. stem bytes	\$285,000	
į	1	13	138M bytes	\$335,000	
ı	4	12	256M byces	\$890,000	

"One of Strutus' strategies now is to come in with price parity with the high-availability ven-dors," said Donna Scott, an analyst at Port Chester, N.Y.-based D. H. Brown Associates. Vendors including IBM, Hewlett-Packard Co. and AT&T Global Information Solutions have been gaining ground at Stratus' expense, she

Both analysts said, however, that Tandem's renewed aggressiveness will continue to pose stiff competition for Stratus. Tandem last month unvailed parallel servers that outperform earlier Tundem models by 50% to 300% ICW, Jan. 231

As for the migration. Holley said the comp ny's PTX Unix and VOS proprietary operating systems on the new platform are 100% source code-compatible with 1800-based PTX and VOS. Users and developers will spend one to two weeks recompiling each application, he said.

"INFORMIX-NewEra is exactly the type of client/server development environment developers need to create production-level applications."

> **Judith Hurwitz** President, Hurwitz Consulting

## Introducing A New Era **In Application Development.**



Application developers who have moved to graphical development tools are learning a painful lesson: while prototyping is fast and easy, it's another thing to try to deploy enterprise applications.

Sure, applications built using the first generation of graphical client/server tools look great. But ultimately, they don't have the power to scale up to enterprisewide client/server solutions.

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Poter Kantaus, Viso President, Abordons Group.

INFORMIX-NewEra is an excellent product that understands both the client and server sides of application development. 77

NewEra's next-generation features include visual programming tools, an industrial-strength object-oriented language, interactive debugger, compiler, repository, and support for team development on Windows or UNIX. It's client/server ready, and it will support open connectivity, so you can use NewEra with non-Informix databases, too.

Joff Papers, Rotas Product Strictes, Lotus Development Corp.:

LiNFORMIX-NewEra offers Notes users the ability to build enterprisewide, client/server applications the extend the value of Lotus Notes. 37

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Hurwitz, highlighting the limitations of first-generation
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MINFORMIX"

## IBM to ship tape drives minus stacking ability

Communical mainframe chang looking to make maximum use of new high-enpacity tape drives promised by IBM may just have to wait until next year. IDM is still competed to start ship.

ing MVS versions of the 10G-byte New Prototype (NTP) tage devices in the fourth quarter. But industry nources familiar with IRM's ns said a key feature that will allow the devices to be split into multiple logical pieces is not likely to be ready until sometime next year IBM to counting on NTP to beto stem a recent

tide of tape market-share losses (see chart) mitted uses But without the so-called volume stacking capability

NTP will be limited to niche uses with very large data sets, such as seismic and ophysical processing said Paul Wolfstaetter, a storage analyst at Gart-

ner Group, Inc. in Stamford, Conn.
"There will be a market in the interim but they can't fully evoluit NTP up-(ii they deliver volume stacking," Wolfstnetter said. He added that he does not expect the multiple votume support to be added to NTP until the second half of next year

An IBM snokessyman declined to comment last week other than to say the company is "progressing with

plans" for NTP. Volume stacking would enable users

bytes each, on a single NTP eartridge. IBM officials have said the tane control poit would then be able to simultaneously call up multiple logical volumes and stage them in a buffer ICW

Jedy 4 19941 Paul Quade, director of capital plan



ning and resource management at Galtheo International in Englewood, Colo., said multiple data sets can already be stored on 3490 and 3490 cartrideys, but accessing them requires manual steps

that would be automated under the NTP volume stacking approach. NTP could be compelling jost from the standpoint of its sheer capacity which compares with a maximum of 800M bytes ner cartridge on existing 3490E tape technology. Quade said. Manager he added that volume stuck-

ing support is needed to make NTP "In order to utilize the technology ef-

house that Youture "Oundered "We don't have any humonrous data sets that would need" NTP's full toGbyte capacity, said Phil Davis, director of technical services at Mazda System

the earliest

Services the information systems unit of Manda of North America Inc. in Flat Dook Mich Malume steels ing might make NTP more internating although Davis said be does not plan to consider upgrading his current stock of \$490F drives and cartridges until late 1996 at

> Competitive price Last summer, when IBM talked about NTP publicly for the first time, company officials said the product would sell for roughly the same price as the \$490E

cost per megabyte by almost 90%. The new drives also are supposed to have a data transfer rate of 9M bytes per second, triple the performance of the

TRM desperately peeds NTP Right now they are not the chosen tone yendoe" Whitetpetter said The technol. ony has great promise, he added, but the initial lack of volume stacking would be ablow - especially with mar ket leader Storage Technology Corp. scheduled to formally introduce both high-performance and high-capacity additions to its tape lineup this week.

BM to seveil new client/server CICS versions. See page 72.

#### A tale of two tapes

torsawTek and Hitacht Data 6ve tems Corp. plan to stage dueling mainframe tape anne this week. Storage Tok is officially eing its tong-promised Tim Line and RedWood devices while

sources said HDS will bring out a pair of sated tape libraries for System/390 TimberLine is a 36-track drive that us

es direct channel attachment and built-in controllers to transfer data much faster an conventional 3490 devices ICW. Oct 24, 1994]. Meanwhile, RedWood has a ca-pacity of up to 25G bytes per cartridge and is being positioned by Storage Tok as a niche product for selentific and seismic applications (CW July 4, 1994)

HDS declined to comment about its li-bruries, although it did acknowledge that an announcement is scheduled for this week. Analysts said the HDS products are plug-compatible with IBM's 3495 and 3494 libraries and will be able to use

Although specific pricing information was not available at press time, the simi larities between IRM and HDS should en able prospective customers to get them into a hidding war, said Stan Corker, an analyst at International Data Corp. in Framingham, Mass, "The end user has now got Hitachi to use as ammunition

against IRM." he noted. StorageTek and HDS are also both ex eted to detail plans for new RAID Level

5 disk arrays (CW, Jan. 30). -Craig Stedma

## Denver utility outsources data center to IBM's ISSC

By Mark Halper

 in a deal intended to help both com-panies move into the era of deregulated utilities, IBM's Integrated Systems So-lutions Corp. (ISSC) subsidiary last ek entered a so-year outsourcing ar ice Company of Colorado

At the core of the deal is a classic ination technology operations co tract that calls for tSSC to take over Pubtic Service's Denver data center, its workstations and betp desk operation as well as its intrastate network. ISSC will also pick up application development. Det Hoek, the utility's chairman, said the \$500 million technology project will save \$190 million over 10 years.

in a separate but related contract, Public Service will provide IBM with enerry consulting to belp IBM trim its ma-

and electric costs at 16 plants in the U.S. The utility will provide those services through a new subsidiary it calls E Prime, which will market its services to other companies. Completing the partnership circle, E Prime and tBM formed an alliance under which IBM will develop applications to belo E Prime customers manage energy procurement and consumption. IBM is not purchasing equity

Role-playing Analysts noted that the exchange of ser-

vices between IBM and E Prime illos trates an emerging trend in which outsourcers play the rote of both yendor and customer with their clients. In another recent example. Electronic Data Systems Corp. signed a 10-year outsourcing deal with Lake Forest, Ill.-based Moore Corp. Ltd. in which Moore is supplying EDS with business forms and commer-

And like (RM's alliunos with E Primo AT&T Global Information Solutions and Delta Air Lines are. jointly marketing services to the airline industry as part of ATAT GIS's 10-year, \$2.8 hillion outsourcing deal with the airline, in that case, the companies estab lished a 56/50 jointly

cial printing

These retationshins are extending themselves with real

interesting puspers said Allie Young, an anatyst at San Jose, Calif.-based Dataquest, Inc. "These types of contracts show a clear direction for the future of outsourcing. The key is

the strategic involvement of the two re The Public Service contract is one of any outsourcing contracts expected as utilities try to blast out of their comple-

Energized							
Recent energy industry outsourcing deals include the following:							
ENERGY COMPANY	Ovrsovacce	LENGTH OF CONTRACT/AMOUNT					
Philadelphia Electric	issc	so years/ \$450M					
San Diego Gas & Electric	Computer Sciences Corp.	5 years/ \$60M					
Hallburton Energy Services	Andersen Consulting, Power Computing, Lifet	so years/ \$500M					
Public Service of Colorado	ISSC ,	so years/ SecoM					

cent former environments and into a competitive market ICW, Nov. 28, 19941. Late last year, San Diego Gas & Electric Co. and PECO Energy Co. also entered utsourcing pacts (see chart). For Public Service, the \$190 million

cost savings will be vital in the new competitive environment, where utilities are Tylnir to offer services at the lowest price.

#### Intel distills

CONTINUED PROM COVER I

its desktop and server efforts, company officials confirmed tast week. In particu law Intel will focus on bringing the Pentium chip into the mobile market in the second half of this year according to

sources elose to the company When this happens, the sort of price outting that was seen tast week - IRM PC Co., Company Computer Corp., Toshihs America Information Systems, Inc. and Dell Computer Corp. all ent notebook

prices - could become the norm esnecialty for 496-based notebooks. IRM out prices on select ThinkPads by 10% to 24%; Compaq dropped prices by se much as 14th on its birth and 17th Pitte line: Tuehiba dropped prices by on to 22%

on a number of books and Dali out prices by up

to 1656 on its

high-end Latitude XP

Prendone ex-

notebook-capa-

brondeped the

mobile market

vimificantly

Last year, note

it took four years for a solid mobile product

to appear after the introduction of the vBC chip, three years for the ARK and se months for the Brettern according to Stephen nesident of mobile ome proudcts a

20% of the over all PC market. while this year they will account for 25%. according to International Data Corp. in Framingham, Mass.

Corporations have been adopting mobile technology in place of desktop technology and automating workers who need high-powered machines that can be easily carried. A Pentium push into the mobile market may increase these corporate re-engineering efforts, particalarly as environmental laws kick in to regulate commuter traffic

Just you wait

While intel has one mobile-oriented Pentium on the market - a 50/75-MHzebin it is planning a rapid expansion, according to sources. Its expected efforts ineigde the following: · A dual-voltage version of the 60/90-MHz

Pentiam processor currently used in deskings and servers. This chip, due in the second quarter, will bring notebooks ap to the level of all but the highest-end · Mobile versions of faster Peotium

chips, expected in the second half of this year Their deskion/server counterparts. will be introduced at the same time. · A strategy to create a two-tiered Pentium notebook market, with an expecsive high-end class and a lower-cost valne calegory.

e Chip sets for the notebook market, expected sometime around midyear. The immediate impact of notel based on these new chips will be a signifleant increase in power for users, according to the sour

And that pleased at least one language. Part of my wish list for tech

better quality sound and video," said Mi-chael Radigue, a program manager at Xerox Corp. in Rochester, N.Y. Faster chins at lower price points will let Xerov denion more advanced technologies for its sales force without having to pay

-ore money Intel's efforts may also result in better battery life, sources said. The new mohite 60/00 MHz chin will run et dual voltsares, 2.9V inside and 3.3V externally. Because of the lower internal voltage, the system will have better battery life. The external 2 TV component of the ohin is preded because PCs are specified to run

at either 3.3V or 5V The new chips will require notebook makers to redesign system motherboards so they can supply dual voltages to the chip, according to sources, They will also need to make a slight enhannement to the nower constr Stephen Nachtsheum, Intel's vice pre-

ident of mobile and home products, declined to confirm or detty specific product announcements. But he did confirm that Intel is working to bring its mobile mpating efforts ap to speed with its desktop and server moves.

Nachtsheim said mobile compoting has some from something that was off the mainstream here to being really smack dab in the middle of It."



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## Digital flexes RAID muscle with high-end storage system

technology

offers "greater

value with

lower cost."

Pushing beyond the borders of its installed base Digital Equipment Corp. last week rolled out a high-end tine of RAID storage systems aimed at IBM, Sun Microsystems, Inc. and Hewlett-Packard

The StorageWorks RAID Arroy 416 is an enhanced version of the system available to Digital customers. It RAID

has a platform kit customized for each of the targeted vendors. Thomas Lahive, an analyst at Inernational Data Corp. in Fra mincham, Mass., said Digital's past strategy has been bazy, but

this is a first slep in going after non-DEC platforms." "DEC has out a jot of money into the design of their subsystem, allowing it to be extremely modular

and flexible via hardware componentry." Labive said "And they've not a lot of time developing a complete marketing campaign for lyalne-added meellow)

Lahiye said Maynard, Mass-based Digital derives more than 95% of its StorageWorks revenue from the installed bear He said the RAID Array 410 is well positioned in

terms of canacity lault tolerance and price per Bob Katzive, vice president of Disk/Trend, Inc. in Mountain View, Calif., said there is a market opcompany can offer broad support for the product "It weems to be a most solution for Unix users with high-performance and high-availability needs " said Yong Kim an account provision after

at ETC Direct, a Digital reseller in Glastonbury. "My technical support people like the product." said Don L. Owens, vice president of MIS at Americas Propane, Inc. in Valley Forey. Pn. He said the

company was evaluating the RAID Array 410 and planned to make a decision in the next three to lour RAID technology, he added, ofform "greater value with lower

- Don L. Owens, Occupy until the StorosmWorks Americas Propane line represents an important part in Digital's turnsround strategy. Anne Hisachard, Digital's StorageWorks busi-

ness development manager for IBM, said the RAID Array 410 is "the most sophisticated subsystem we've offered to date to these markets." The RAID Array 410 represents the third generation in the product line The product is priced at \$25,499 for a 12 6G-byte

onligaration. The optimized controller performs up to 2.600 I/O operations per second and has a 37M-byte read, and write-back eache.

Digital customers parry with big iron. See page 22.

"Refero Bill came here, there was a lot of freading wa-

The politically

correct power

where you want

to go quickly. In

situation, you

have to establish new

rules of the

ter There were an awful lot of folks in Bill's area that

### Hybrid service eases wireless data access

portunity for Diettal's intest offering because the By Michael Flizgerald

> By giving users a way to send data transparently over conventional circuit-switched cel lelar networks or rellular dies tal packet data (CDPDs networks, cellular carriers last week removed another of the many impediments slowing wireless data transfer.

GTE Personal Comm tions Services Ameritech Cell Jules Services Reli Atlantic Mo. hile Systems, Nynex Mobile AT&T Network Systems and Isotel Research Ltd. jointly an nonpred a hybrid wireless ser vice that may provide the encouragement users peed to been testing wireless data.

#### Sweet relief Many wireless renders had ad-

amantly opposed joining the two services. This should take a lot of the edge off the criticisms (the CDPD industry) has received," said Chuck Parrish syneral manager of GTE Per nonal Communications Services' mobile data services. The hybrid service, which dards body CDPD Forum, Inc.,

Is set to go into beta testing in the angles Parrich said. It should be deployed and runnine before the end of this year. "The petential impact is

enormous," said Robert A. Rutelev vice president of sales and nerketing at Wireless Telecom. Inc. in Aurora, Colo. Wireless Telecom is one of the first distributors of wireless orient ed technologies. Balgiey said the announcement means "users can migrate to wireless more easily' and also more tiebtly interests both types of

In the short term, the hybrid service will let users start nationwide regiects without having to wait for CDPD to be in

While cellular leader McCau Cellular Communications, Inc. was missing from the sunouncement. It is considering the proposal, according to Kendra Vandermuelen, general manager at McCaw's wireless data division.

Dictatorship CONTINUED FROM COVER 1

a nickel of the \$50 million budget without a signature from Eager or a designated IS vice president. Outside of IS, Eager has secondary signing authority on all hardare as well as software purchases.

Under another of his mandates, a single team of IS staffers - and no one else - is authorized to make system chapges. Soon, staffers will be held individually accountable for system errors

ventional but effective

in and of themselves, Easter's manager and fuelier and not especially new or imaginative. Eager himself con-"None of this is rocket science." What is noteworthy however is how well his toughlove management style has worked at a time when stuch

of the business world is enumered of teams couches and decisions by consensus. "In a turnaround situation, I didn't leel like empowerment was the right strategy," Eager said recently.

You can evulve to a republic later, when everyone is ready to defend and obey the constitution." So far, the contrarian strategy is paying off, and Community Mutnal's 18 organization is shaping up. By April.

for instance, the company plans to strike Erast & Young from its IS payroll. When Eager arrived at the insurer, it was paying the consultancy \$350,000 a month to man-Operational stability is also on the rise. By the end of 1994, the number of batch system production errors had

decreased by 65%, thanks jurgely to what Eager called incessant hummering on quality. The improvements have not gone annoticed in the

mpany's business units.

spent all their time explaining why they couldn't do something, and things weren't getting done," said Tom Moury, vice president of enveromont programs "What Bill has done," Mowry added, "is install some discipline in the IS shop. He's definitely assigned ac-Other IS organizations could benefit from doing the

same, according to Kay Redditt. president of ComiTech Services Corp., an IS management consulting firm in Columbus, N.C. In a recent study of 90 companies with annual resumes of \$10 million to \$49 billion. Redditt lound a direct correlation between decisive, demanding IS managers and high corporate profit mar-

Market leaders are decisive, demanding and confideni. They consult with others, but they make decisions on their own." Redditt said. More and more IS organiza tions are putting them into place (because) consensus decision-making is the worst when it comes to a compa-

ny's financial performance. The politically correct empowerment thing is nice. but it will not get you where you want to go quickly." agreed Jorry Loey, president of CSC Information Man agement Consulting in New York. "In a turnsround sitnation, you have to establish new rules of the game very

Other rules Easer has established in the name of or-

guitzational improvement include the use of a single, standardized application development and testing methodology to replace a largely belter-skelter set of ocedures. At one point, he said, he discovered that five of nine separate systems development groups were making simukaneous but uncoordinated changes to the same core processing programs.

IS management left in the cold The only thing worse than that, Eager recalled, was finding out shortly after he arrived that what Communi-

ty Mutual's management regarded as the company's systems salvation - a \$30 million managed care systems project under development with IBM — was being conducted without any IS involvement whatsoever. Fed up with the IS department, Community's business unit managers had secured top management's approval to go around IS to develop a system on their own Subsequently, Eagur integrated the project into a

nore comprehensive corporate IS strategy. He also bired the former DRM system architect in charge of the project to oversee the managed care system, which is now under the auspices of IS and will eventually replace a significant portion of Commonity Mutual's legacy sys-

But Eager's turnaround is lar from complete. in December, Community Mutual announced plans to merge with The Associated Group, a somewhat larger and highly decentralized insurance company based in Indi-anapolis. Once combined, the new company's IS or ganization will have a hudget of approximately \$290 million and a staff of more than 800, according to

The merer has evented a let of uncertainty it's also created a lot of urgeney," Eager said. A year ago, he added. Community Mutual's IS group "wouldn't have had a prayer of survival. Now, we have a chance to be a player in the merged organization.

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## Info highway hits technical detours

ByGary H. Antheli WASHINGTON

Building the information superhighway both political parties and every interest group singing its praises. But one Washington organization recently splashed

some cold water on the project, saving shilsty and ensuring end-to-end reliabilthe clobal broadband "meta-network" is up agninet some formidable technical obstacles.

The General Accounting Office in a recent report said the data highway faces three technical challenges; protecting ture superhistiway but they are not comprivacy and security, enabling interoper patible, the GAO said. "The principle

ity in particular the GAO said the sun highway is off to a poor start when it comes to interoperability and reliability. Today's telephone, cable and wireless networks form the foundation for the fo-

shortcoming of the existing communication infrastructure is its inability to provide interruted wice, data and video services " the report said "A business user requiring fall threel may have to use

three separate networks The GAO noted that the industry is rushing pell-mell to introduce new services. Unfortunately much of the new technology is based on "ill-defined, anticipatory or competing standards. thereby further complicating efforts to

achieve Interthe report said "The appull ing lack of in teroperability in the computer world in the milletone the will draw down

American sole ers," said Dan Lynch, chairmen of Interop

in Foster City Calif, "ft's hard enousts to build

applications to one architec-

ture. Users are

crying . seamless solu

squoco networks, 2.2 on computers and us million users in go unies, according to

"We have seen a bewildering array of products that cannot interoperate [at thel network operating systems level, at the protocols level and at the end-user appliance lettel " agreed Internet pioneer Leonard Kleinrock chairman of the computer science department at the University of California at Los Angeles. Nevertheless, the Internet has been enormously successful in serving a yest number of users in a variety of critical

ways, so the users are finding ways around the interoperability problem."

Eric Schmidt, chief technology officer at Sun Microdystems, Inc., said the govsent should take steps through the regulatory process to guarantee open access to the network. 'The policy should be that whomever evolutions do not have a choice fremulators) can intervene to create a choice ... but not to man-

date it or to design it." Schmidt added. Existing wide-area networks that will form the foundation for the superhighway are not as reliable as they should be the GAO said. "A growing number of major outages have raised concerns, trig-

gered losses of service, potentially risked lives and affected the economy the agency said.

And the problem is likely to worsen as increasing network complexity makes it

harden in diagnose and correct problome, the GAO said.

"The issue of end-to-end reliability seems to me to be a red herring," Kiein-rock said. "Sure, the [Internet] slows down is a painful way at times, but it con-tinues to function and to serve an enor-

mous land. In fact, the distributed nature of the perwork provides considerable y and resilience in its opera

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Development Environment.

## HP runs interference for OLTP users

Users are having one beek of a time tying together the threads of distributed com puting, and HP knows lt. Last week, Hewlett-Packard Co. un veiled its new Middleware Engineering services plan for helping customers naviente the rocky mad from mainfrance to University for an line transaction processing (OLTP). Legacy OLTP applications typically run under IBM's CICS ction monitors on mainframes

and performance, which HP officials said has slowed adoption of distributed comnuting software for OLTP. A small group of early adopters - numbering in the hundreds worldwide analysis astimate - are deploying distributed mission-The program is intended to address critical OLTP systems.

OFTP from the comfortable world of mainframes is complex and difficult. John Daly, a senior analyst at Summit Strategies, Inc. in Boston, said HP's new necessary addresses users' fears that distelbuted Of TPwill result in decreased security and reliability as well as slower

The plan will give HP users a one-stop shopping advisory service as well as direct assistance from HP and its software and systems integration partners. Starting this month, customers will also be ship to diel an 800 number for referral to

Users agreed that many middieware prod nets are practi cally invisible Not only is it not self-explanatory, but proto set the infor metion out said Doug El-

OLTP middle.

WHITE ACKS alist in the US

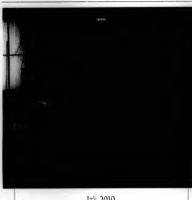
toft director of network operations at the University of Iowa's College of Engineering in Iowa City. Eltoft's network has more than 150 HP workstations, and be is working to deploy the Open Software Foundation's Distributed Computing Environment software. 'How can you sell something people don't know about?" he asked.

Coordination with other vendors is an-

other key to middlessure success. "It's a sign of recognizing that this is a major problem," said Judith Hurwitz, president of Hurwitz Consulting Group, Inc. in Watertown, Mass. "There's not a lot of Imiddlewarel experience out there. And when you're trying to integrate five or aix different technologies from different vendors, a lot of things can go wrong." HP's new "teleshopping" service will focus eo its key middleware offerings, ineladingOpenView network manager, Operations Center systems management platform and new High Availability Clustering software. Encing/9000 transaction monitors cost up to \$45,000; the CICS/9000 monitors cost from \$25,000 to \$178,000. HP and its partners sell associated middleware for open systems networking and application development HP will also provide consulting services and referrals to systems integrators capable of linking pieces of middleware. Industry analysts said HP's initiative

is timely, given users' worries about moving OLTP applications from mainframes "The analogy is that I could go out and haild a car from parts, but it would take forever, it wouldn't be that good, and it would cost a fortune," said Nina Lytton,

president of Open Systems Advisors, Inc. in Boston, "I would rather be able to jump into the car and drive it."



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## If at first they don't succeed

the many PC software companies Microsoft usually does not get the product right in its first attempt. But as time has repeatedly shown, it usually gets there. Microsoft has a long history of starting with mediorre products and sticking with them until they have become first-class (products), no matter how long and nainful the process," said Jes se Berst, editor of "Windows Watcher,

an industry newsletter in Redmond Pain notwithstanding, Microsoft has epeated this pattern and has come to dominate nearly every major product category it has entered. "It isn't just endurance and resurces." said Jeff Tarter, editor of the perodetter "Microsoft's secret is that they listen to customers more carefully

than almost any other software vendor on the market One example Tarter cited is Microsoft's Office amplication state. Initially, intended as a simple software applica-

tion bundle when it shipped in October 1990, "Microsoft garnered input from users that indicated they were on to something" Durter said. Today, the most conservative industry estimates give Office more than 80% of the appli-

This method has resulted in many market successes. For example, Word, Excel Prevernoint and Access - the programs in Office - were all considered fairly mediocre in their first retease Windows for Workgroups was

on Novell NetWare LANs. Users put down Windows NT 3.1 for being slow and buggs

"We will test a Microsoft product the first time out but me don't men it " said Steve Reifsnyder an analyst at GP Canital Corn in Canton Obio "We usually mait until a product is stable and more generally accepted in the market.

In an exclusive Commuterscorid survev of 100 iS managers last week, more than 60% said they did not trust Microsoft to deliver products without burn. Not the same percentage said the hum did not affect their willingness to use Microsoft software However, this is a very different standend then what overs have applied to

system syndom such as IRM or Digital said Thomas Christin a research ren iret manager at Beli & Howell in Allen-

town Pa While Microsoft's products cost less they tend to offer less support, and the mer usually has to wait for two or three services to est a solid product. However, on many bean more choices in hear to implement their strategy, Christie said.

It is the price you pay for more controt over the technology you implement," he said His company, for example, had to wait t 1/2 years before it could deploy

Windows NT3.1 "It didn't cause as any problems because everyope's expectations were pretty low," Christie said. "Quite frank. ly, people didn't think we'd even be able to get it running on a PC."

ment is asking him for a recommenda

Microsoft's broad agenda and its

problem with delivering core products

on schedule are beginning to affect its

historically rosy relationship with Wall

Street as well. Citing the Windows 95

delays, financial analysts such as Rick

Sherlund, an analyst at Goldman,

n on the product, he explained

## Users happy to ride Microsoft juggernaut

CONTINUED FROM COVER 1

conducted last week, 79% of 100 IS sites consider Microsoft products critical to their companies' strategies, and 52% view Microsoft as important an enterprice partner as IRM, Rewlett-Packard

or Digital Equipment Corp But only one-third of the respondents felt Microsoft really understood their businesses' IS requirements. And 37% said Microsoft's tendency to deliver products late continues to affect their willingness to use the Redmond, Wash., dor as a mission-critical vendor Then amin, 61% said late product deliveries do not hinder their plans.

in other words, many users have come to accept the glitches, the delays and the lack of hand-holding as part of the new paradigm of distributed com-

YE 7 FAR

many markets, we are in some ways forced into a relationship with them, sold Chard Knopes a project manager at Clark Oil & Refining, Inc. in St. Louis However Microsoft's domination of these markets does not necessarily mean it is able to deliver on all of

Chark's needs, Knoner said. This never would have happened with an IBM or DEC." said Thomas Christie, a research project manager at Bell & Howell Co. in Allentonen Dr. "H they told you about it, they had that so-

lution, and it worked." "Am I comfortable like I was with IBM? No." Knoner said. "And their entering so many different markets is definitely a concern to me. If I could sak [Microsoft] to do nome-

thing, I would like to see them specialize in a couple of areas where they have strengths. They are spreading themselves too thin

Nevertheless, Microsoft's market position in operating systems and desktop applications, along with its emerin development tools and servers, has made it a company that IS cannot view the same way as any other desition wender. And while most users still have faith that Microsoft is not about to hit the wall (see survey chart, Comp 1) those still are some clear had i entors that it perhaps cannot do it all These include the following: · internal struggles between its applientions business and its operating systoms business over which features to

incinde in what products. Commetition within Marcoard among product groups for resources to complete projects

· Repeated delays in shipping major renducts such as Windows 95 - the next version of Windows - and Exchange Server, a high-end groupware server that Microsoft has positioned as the challenger to Lotus Development Corp.'s Notes

'I'm concerned that they keep pushing the date back" for Windows 95, said Keyin McKinney, on 15 manager at Durscell USA, Inc. in Lappaster, S.C. The

Sachs & Co., says Microsoft's stock is delays have been "a hindrance" to Meunder pressure in the short haul Other analysis, such as Paul Joh at Robertson, Stephens & Co. in New York, wonder aloud if Microsoft can find the developers to finish its myriad products. "At som point you have to ask. Where are they going to find the bandwidth to do all this? Johnson said While Microsoft's competi tive advantages are tied to

its ability to leverage its position in different markets so are its problems. Because of its hure installed base and the number of products that run with its operating systems, products are

almost constantly delayed because of ever-increasing heta cycles. Extensive beta testing is currently holding up Windows 85. Still other proj eets such as the pert-expectation open ating system Caino originally spom ised for the end of 1963, are held up because Microsoft moves around its for

velopers among strategic projects. The fundamental reason behind Cairo [stipping] is that for 18 months we took people off of it," Jim Allehin, senior vice president of Microsoft's Business Systems Division, said last week. "Literally, it stopped while we did the basics





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#### Retter late than never?

Precautionary measures

Do you factor unannounced

product delays into your planning?

One of the biggest criticisms figuity in delivering products on time. Some latee omers include a Windows NT - Originally sch uled for the second ball of 1962, Mi erosoft's first 32-bit operating system with network exte

shipped in August 1993 Systems Management Server/Hermes --- Based on Windows NT 3.5, the product shipped one year late in the fall of 1994. Microsoft cited a need for a longer beta

testing cycle s Chicago/Windows 95 — In carty 1991, Microsoft touted a Windows 4 0 release that would include an object-oriented file system and ship by the fourth quarter of 1993. Eventually reasmed Windows 95. is was sinted last year for a fourthquarter 1994 release but has bee aved twice. Microsoft blamed the delay on the need for more beta testing. The shipment target is not summer or fall of this year

• Exchange Server - Based on Windows NT, this high-end group ware server was supposed to ship by the end of 1984. Microsoft recent by said it will not ship until midvear. s Caire - This version of Windows NT couloged with an object-oriented file system is unlikely to ship be fore mid-1997 according to some analysts. It was originally stated to ship in the first half of this year. A Microsoft official said the delays stem from moving developers off the Cairo project to complete other work - William Brandel

tile OFF 15/32-bit intereperability code and a tremendous amount of fo cus we not on to Daytona [NT 3.5]." Allohin ingists that using the same

team for various versious of NT makes good sense. It ensures continuity, resulting in one high-quality code base. Using different teams on two or more versions of the same code base often results in serious problems, he said.

We seem to emsure that the peopie who already know the code base [make] the ir's so much pasi er whon you have

one team moving ahead," Allebin ome question this approach to ent because it mately holds

And with Micro

agenda, that could be viewed as preading resources thinner.
But many who have followed Micro soft's maneuvers or competed with the company have only respect for the

Like any software company, Microsoft is not without its share of "bandwidth issues," said Jesse Berst, editor of "Windows Watcher," a newsletter in Redmond, Wash. For example, he cites competition for Gates' attention and delays caused by waiting for Gates edback. He also said Microsoft has ostrated an inability to coordinato multiple overlapping marketing activities and technical initiatives.

"Having said that, they do a better h at this difficult task then any other

hig company I know," Bernt added. "If you look at the behemoths that bave fallen on hard times, they became insular and risk-averse. That's not happening at Microsoft," said Richard W. Oliver, a professor at Van

derbilt University's Owen Graduate School of Management That leads to the broader question

of whether Microsoft, arguably the most influential and player in the commater industry

without losing the razon edge and focus that got it this far. Gaten says his company is sticking to its core writing software We don't do chips, we don't do

Don't know - 2% hardware, we're RASE: 100 IS PROFESSIONALS not going to build make fiber make movies," he said (see page 32). ironically, Microsoft's rivals and

empetitors are the most adams not Microsoft's ability to pull off tho The same [bandwidth] criticism could be made about Lotus or Novell," said Glen Mella, a vice president of boalness applications at WordPerfect, the Novell, Inc. Applications Group. You don't bet against Microsoft in

this industry," said Jeff Papows, vice president of the com products group at Lotus, as he flung open a cabinet in his office. The cal net hid a recent Fortiers magazine with Gates' face plastered on the cover: "I put this here to remind myself of that fart every day," he said.

### Financial outlook shows some clouds on horizon

By Neal Weinberg

hat is the next number in this sequence: 66, 58, 35,

This is not an esoteric SAT estion - It is something far more real and troubling for Micro not The numbers describe a drag slowdown in the percentage rate of its earnings growth in the past four years. And the short-term promosis is not all that roop with many analysts down-grading Microsoft's stock from a Buy to a Hold because of the company's debays in shipping Windows 95. Other than that relatively minor blip, however, Miero soft's fundamental financial health is not in question, even as the company continues to fund new projects.

Can't keep up the pace

Microsoft has publicly stated it can keep on the torrid pace of the past five years, during which annual revenue grew from \$1.1 billion to \$4.6 billion -- a 42.1% annual growth rate. By comparison, Novell grew 32% in the past five years, Oracle Corp. grew 25%, and Lotus grew 16%

For now, analysts see the comleveling off to a sustained period of growth of between 20% and 25% a year. But lo accomplish that, Microsoft has to form shead into new revenue streams to continue its relentless drive to stay on jup of the computer software food

"The software markets are b saturated," said Michael Cosus professor at MIT's Stoan School of Management in Cambridge, Mass. "If these guys didn't go after new segments, like multimedia and on-line information systems, they'd stagnate and collapse."
That is not likely to happen, analysts said, because Microsoft has two things

going for it that other companies do not: \$3.8 billion in each and Bill Gates in

The company will remain on top "as longer Bill Gates is there with the reins. actively engaged and consumed in building the company," said Richard D. Owens, an analyst at Pacific Crest Secu-rities in Portland. Ore.

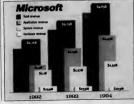
"Microsoft bappens to be in the forto us position where cash flow from existing business can fund experiments tion for long-term benefits." Michael Geran, an analyst at the Pershing Division of Donaldson, Lufkin &

Jenrette Securities Corp. in New York They are continuing to reinve "They are continuing to retraditional business to continue to grow The sheer size of the company allows them to do that. They can throw money at a project until they get it right and if they don't get it right, they can buy Intuit." Owens said, referring to Micro soft's prediest \$1.5 billion purchase of Intuit Inc. in Menio Park, Calif. Intuit produces Quicken, the popular finan

cial software program. Windows 95 will not provide a signific cant bottom time boost until fiscal 1998. but Microsoft still has shown the uncan ny shility to churn out one profitable

quarter after anoth A case in posot is Microsoft's decision to take office software such as Exc. and Word, puckage it into Microsoft Ofe and market it manineally. The reuit a smash hit, with more than 6 mil-

Microsoft also surp rierd analysis in its intest quarier, with profits increas-ing 29% and revenue jumping 31% Strong holiday PC sales boosted Windows 3.1 and consumer products such as the Encarta CD-ROM encyclopedia. Microsoft Office continued its strong naics, and Windows NT gained ground



### ME WHY







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# Gates: Quality key to software futures

J Johnston recently interviewed Microsoft Chairman and Chief Executive Officer Bill Gates about his views on the commany's business plans, future and potential for continued auceaux

#### isn't something like starting you on-line network pretty for affeld sesses you've entered to

A So far, we've had major success in the new areas we've moved into. In the CD-ROM world, we started in 1986. [In] graphical user interface, we started in

We think software has a major role to play in some of these new communications apportunities, including very highspeed connected networks, and we're investing a massive amount of money in that and hiring lots of great people As you do tools for publishing within a corporation - so that people can share information - there's no difference between a private network and a public net

work in terms of doing funall and competing with Lotus and doing server products, we're in the business of doing essentially corporate on-line services. id so why wouldn't it be wise to take that technology and use it for a public network as well?

# the long rus end up being a

A Welike to try and use our software expertise in new areas. And frankly, in some of these new areas we on into, we won't do as well as we expect. We just have to be smart about figuring out whe that is fand I deciding if we can fix it or facus those resources somewhere else

and had his successes in a sense that's dependency it means you can look at any where you're not doing well and cav "Ob. well, we'll just be nations, and this will work." I'm sure we're going to learn shout this on line business as we so

#### Consulting is not overly hound.

**A** It has been extremely valuable to us in terms of understanding very large enterprise situations and petting good feedback oppur products and being able to put people in to help get a custome going in terms of using the kind of build ing-block technology that we out out. But our core area is building software products. That's why we have defined an up

# tion did?

A Notito that extentl or even the size that Oracle has built theirs up to

#### Us there a concern about finding high-quality employees?

A Every day. The quality of the pennie we bring in is fundamen. tal. And when I'm telling (groups) that they can grow and do new things, the critical path is finding people that meet our

So we're always very appressively recruiting, and our ability to do that will be key in determining how quickly we can do new things. We have a strong campus recruiting program. And we've been very backs man the years. We did sent sens on recruiting last year, both setting lots of smart people out of college and bringing in world-class experts in areas

like graphics or database and research But I'm just haning we can keen that up because it is necessary to not the things done that we want

#### O is there a limit to how big the company can get?

A Cortainly there are limits here. We're only pursuing certain areas, and these are all supercompetitive markets. We make it clear that our approach with fi nancial neonle is year, year conservative We always say there's a good chance that we won't be as profitable as we've been and we certainly won't be growing per centage-wise as fast as we've been. It's just part of our outlook that we never hear about our future

### Q How much do you plan to grow la the

A You won't see us growing our (research and development) group all that dramatically. Maybe over the next three years RAD will grow at note. That's a lot of people, but that's 10% a year. And personnel wise, that'll be our area of highest growth. Everything else we'll try to keen below that We falso levent the [Intuit] merger to be approved, but

take the baseline essentially as Microsoft plus Intuit. We will have a good-size jump as soon as the merger is effective, but we'll [also] have a good-size jump in rev-

rare, is there a deager of dev ing caught up in endless meeting and petting less actual work does

A We break our projects down Into n sonably small groups, and we put all the different skill groups together. A long product cycle for us is two years. In many cases it's more like 12 or 16 months. What's the biggest team we have? I think Excel might be 150 people, [On! Windows os. I think we have 240 or something like

A like to think that the company maybe wouldn't be as clever or move as fast without me. But there is a tendency when you're outside this company and just read about it in the press to have an over by grand view of my role in doing things.

here. There would be a vacuum, and there would be a need for somebody to step in and take laudership. amebody would have to be pulling it together, particularly when you get into

areas like taking big new risks to do new things, like doing Microsoft Network or the Avestment in Advanced Techn setment in Advanced Technol

ne else might be more com wither than I am about those things. But in any two-, three-, four-year sense, ve set our direction, and there'd be y of time for someone else to come nd out their stamp on the company.

### Microsoft employees juggle work, family obligations

By Neal Weinberg and Stuart J. Johnston

John Neilson arrives at his Microsoft office at about 5 a.m. and typically works until 8 p.m. Even if the sun were shining in rainy Redmond, Wash., he

might not see it for days on end. He used to go into the office on weekends as well, but the cicht-year veteran has joined the growing ranks of Microsoft employees who have turned 30 and started families. Nellson, 35, has a daughter, and his wife is cting twins in Max.

But thanks to an Integrated Services Digital Network line that Microsoft installed in his home for highspeed access to the company's corporate network backbone. Neilson until about 9 a.m. and then province with his

Older and better Neilson, general manager of the organization customer unit, said Mi-Generation Xers who are fresh out of college log more bours than the thirtysomethings. Bot be and his coup-

Life by working from terparts, like aging ball-People with families really focus people work on exciting projects.

on what's most important. They're



necessarily longer," Netlhiaz nos Because Microsoft em ployees - from Chair-

man and Chief Executive Officer Bill Gates on down - work infamously long hours, burnout is always a risk, But Stephen T. McClellan, an analyst at Merrill Lynch Global Securities Research is San Francisco, said the Microsoft model is oot a hierarchical, crack-thewhip sweatshop. It is a flat, open culture where

"It tends to be pretty voluntary,"

McClellan said. "The toughest challenge is the one you give yourself." Yet Gates eaid he pays attention to e employee burnout issue as well.

We're careful if someone is work ng at a pace that's not sustainable to try to definitely get them to avoid that because we're here for the long term, Gates said recently. "Most people here do have families, and yet they love their jobs, so they're always balascing their time in an effective way The tools, like inptops and off-line E-mail, actually do have an impact." Mike Murray, Microsoft's vice presi

ot of human resources and adminstration, said. "You may have not back from a 14-hour day to a 10-hour day, hot we expect the same level of usity as we always have."

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# Computer Industry

# Oracle seeks to revive app sales

ORACLE

PLATINUM SOFTWARE

GREAT PLANES SOFTWARD

No. 2 position in client/server race not enough

Oracle's Ray Lane:

SAPAG's success

form better

Ry Kim S. Noch

Oracle Corp.'u applications group — both products and managers — will be under a microscope between now and is thinking about which way to run," the end of March, facing perhaps its most

The goal is to jolt what have been comparatively slow sales of Oracle's financial human resources and

(see chart). the [applications] group's performance," acknowi edged Ray Lane, president of worldwide operations at Oracle. "We had done pretty well in the business when we had no competition, but

ensman said, explaining his job. For the past year, technological and internal organizational troubles at Oracle have dampered user enthuuiasm for the applications. which otherwise "have a lot of potential " said Clare Gil-Inn an anabout at International Data Corp. in Praminetum Mass Historically,



our, and it's about to stampede ... but

applications," Oillan said, "Oracle itself is very visible, but its apps

aren't." Irenically one of the biggest page concerns is a visual one: a lack of a graphical mor interface (GUD, GUIs on the nackners were due out before the end of last year but are now

No GUI means Oracle packages are tougher to modify than rival offerings The way I see it, the elephant's been from SAP PropleSoft Inc and others noted a systems manager at a lumm Ora-

> ele site that uses several vendors' pock-Graphical versions of four Release 10.5 Oracle modules are now in beta test

mg and slated to ship in April, according tol and We've upont the last six months trying

to make the decision of fwhether to not Gills on Release 10 or Release 11 " he said. "And it took close to a year to netu-Doing a double take Sales of Oracle's client/server applications grew faster than the 18% industry average, but SAP AG increased its lead over Oracle by more than doubling sales from 1001 to 1004.

TOTAL 1994 MARKET VALUE: \$5.96 BILLIONS

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Intel Corp.'s soo-Miltr

Gateway's corperate

market strategy. It

includes the follow

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Driver \$1 non

RAM: HEM bytes.

Pentium leads

8.1% 167 89

18% 176.3%

0.7%

0.7%

Crities say unch delays are evidence

that Ornele is too hig to concentrate well on any one product area, a sotion that

I ame denied "I art year at this time we focused on database," Lane explained. We were losing share to Sybase, and now we've turned that around. Now it'u applications' turn. All management attion is forward on spotications."

nagement upsets within the applications group have not belped. For example. Greg Brady quit last December as vice president of worldwide

applications marketing be has not been replaced One item under conside ation is reorganizing Oracle's calce force Lane said New database sales - compared with application deals - are generally faster and more lu-

crative for individual sales people, be said. "They ask emselves, Will I starve if I don't sell applications?" and the answer near is 'No."

Oracle plans to take action hased on Bensman's recor mendations after his study is moleted March 21

#### IBAP AG's succesul bas giv en na a wake-un call."

Cut to the chase Oracle may have held on to the No. 2 stot last year in the client/server applications man but the position is "engageral able" to Oracle, said Jim Bensman, an independent consultant and former SAP executive whom Oracle hired to figure out how the applications group can perslated to be delivered in phases

### Gateway hard at work on hardware, support plans

By Jaikumar Viayan

SAP AG passed the \$1 bills mark with revenue of \$1.1 billion for 1994. The Walla. Its North American liary, SAP America, Inc. in Philadelphia, finish out the year with \$267 mil-

Briefs

boro Mass. and Bur-

nt of 11 R operati

PC mail-order giant Gateway 2000, Inc. is devising some strategy changes to boost its presence in corporate markets and attract the confidence of large ac-The Pc-100 based on

In late March or early in the second quarter, the North Sioux City S.D. vendor will cap a year of quiet preparation for the corporate market by announcing a range of 80- and 100-MHz Pentium-based systems The systems will feature Peripheral Component Intereonnect technology and bundled systems manage nt and remote diagnostics software

The hardware announcement will also include exanded service, support and marketing plans simed at Galeway'u major accounts

To unreceed, however, Gateway will have to work hard to overcome its less than sterling reputation in the PC business, analysts said, in the past, the connany has been placted by complaints on a variety of issues, such as systems and parts reliability and a general lack of responsiveness to customer gripes. According to Gaterray, the appointment will mark the compre-

bensive rollout of a strategy it has been piecing together for some "We have had this forms for the last 12 months. We've been structuring focused teamuby industry, and we are moving to implement

the kind of things" — such as greater product reliability and sup port — that major accounts will look for, said Todd Osborn, vice president of sales at Gateway For instance, to provide the kind of customized service that corporate users expect, Gateway is scouting for third-party service providers. It has already set up a dedicated customer service and

26.1%

14.8%

66.7%

57.5%

18.7%

technical support group for customers with more than 75 Gateway systems. It also recently increased its support staff, opened a support facility in Kanssa and appointed Jim Collas, a former vice president of engineering at Gateway, to oversee customer support and technical service.

To address parts and component quality issues, the company said, it has created a supplier quality certification program and a manufacturer quality program. These steps are vital for Gateway's midrange ambitions to have any chance at succeeding, according to analysts.

It'u a big opportunity for them. They don't have a big presence in the corporate or consumer markets right now ... two opportunities they have missed by focusing on the direct-response business," said Richard Zwetchkenbaum, an analyst at international Da ta Corp. in Framingham, Mass

"But they are going to have to build u major, rock-solid support infrastructure. They are going to have to contract with a very reputable third-party averdee organization and maintain a differentiated product line." If they want to succeed in this market, Zweichkenbaum said.

ware vendors team with service providers. See page 43.

# WordPerfect and Novell have united to create the perfect office.



# Makes Microsoft Offi



Introducing PerfectOffice:"
The first network suite.
Unlike Microsoft Office, it
doesn't box you in. So you can
work with other people and
other information. Any time
and place you want. It isn't
just another office, it's the
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Complete integration vs. partial integration.

The programs in PerfectOffice have a consistent PerfectOffice uses more common code and components. reducing system requirements. Plus, it supports Windows technologies like OLE 2.0 in more programs than Microsoft Office. Ironic, isn't it? Automatic software vs. manual software. Only PerfectOffice has QuickTasks\*\* that do your work for you. So you can do things like create and E-mail a memo simply by clicking a button.

PerfectOffice is so

automatic, it even corrects

spelling errors as you type.

We know, so does Microsoft

interface. So do the programs

in Microsoft Office, But

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THE PERFECT PLACE TO WORK

### A 'net loss

A friend of mine called me last month with the good news that he'd landed a job heading up PC and network support for the Boston office of one of the nation's leading consulting firms.

As the conversation drifted from congratulations to specific details about the company, lasked about the firm's use of the Internet. It seemed like a very useful and logical medium over which the firm could conduct various aspects of its national and international business, meto of its Econsisting.

"Well, let's just say we're not going to do a lot on the internet just yet; some mail, but and mark more," he said, adding that there were a lot of security concerns-He anid be feels firewalls are nothing more than raison

ne and he rees in rewaits are notating more total into obstacles for backers who live for such challenges. Obviously, this consultance isn't ready to join the ranks of General Electric, IBM

ranks of General Electric, 18th or even the San Diego Supercomputer Center, which have had their Internet firewalls breached by hackors. And let's face it, if these types of organizations can't protect their Internet enclaves, what are your chances of doing to?

oc's smitoour reremited

Complicating matters is recent news that backers have developed a very sophisticated means of electronic intrusion

seeals or necervious untraktion that has security experts firmatically serambbling to educate users about the damper and developing and dotes. The saw threat is made passible by a basic flaw in the internet's original device. That develope disk it take into consideration the prescribing that the latermone of the development of the damper of the conposed to be disk that the damper of the damper of the contract and the damper of the damper of the proposed to be disk the damper of the damper of contract and this more.

oemics and usue may be a result of the justified alarms set off by recent attacks, the internet can never become that commercial highway? Security experts claim that improved encryption technology will mittigate this latest round of 'net threats. But remember, hackers live for the thrift of a challenge.

There may be an even more compelling reason to avoid the interpet as a commercial medium. Very few companies are making money with it. As reported [CW, Jan. 23], some retailers and "virtual mail" owners have shuttered their electronic store fronts.

Pioneering cyber-merchants have found plenty of window shoppers, but not many are willing to expose their credit-card numbers to an insecure environment to make purchases. In addition, it is still very difficult to find your way around virtual mails, even if we are a soubstituted user.

you are a suptimization of use. Because of these security concerns, network managers should flight for a slow and seesdy pace in the lasternet rice. I and when there is a necurity breach, the flagers will almost inevitably point to the internal networks and the prophe who halld and manage them—you. This is one good reason for concern, unless of course your company of data into I worth protecting.



Bill Laberis, Editor in Chief Internet: blaberis@csc.com



#### OS/2 delivers what users want

Regarding "IBM kernel pops" [CW. Jan. 9], neither our microker-lei insplementation nor our product delivery plane has changed. OS2 for the PowerFC is a micro-kernel-based operating system. It will support DOS-Windows and OS2 applications when it is introduced, and ower time we will add application support for other operating environments, including enrating environments.

erating environments, including Unix, as promised. Our plans for delivering that environment have evolved with customer feedback — a far cry from

vironment have evolved with customer feedback — a far ery from the massive scale-back you describe. In the first release of OS/2 for the PowerPC, we'll provide binary support for the DOS/Windows cerv-

ronment, we'll provide consistent 32-bit application programming interface OS/2 applications, and we'll add support for other important application interfaces over time.

It's what our customers want.

and it's what we planned to deliver all along.

Jo Ann Sager

Director of public relations
IBM Personal Software Products

I have been an OS2 advroate for many years now, and it is way too early for IBM to call 'it quits on OS2. With all the delays Microsoft outliness to hand out, OS2 should be sible to pick up a larger market share. But for OS2 to continue the many years, more software makers must support it by developing native OS2 notware. This support is nevely lacking, and unfortunate-

Armonk, N.Y.

ly, I don't see this changing unless Windows 95 is a complete disaster or al lesst a dud similar to the original Windows NT.

So the book has not been closed on 082, and I hope it will not be closed for some fine to come But If it doesn't get into the mainstream of the computer lodustry, it will follow the path of Wang and Digital as you mentioned in your cellstorial ["Breaking points," CW, Jan. 16].

\*\*Denvid Clark\*\*

David Clark Reston, Va.

#### Wise decision

Kudos to Luther Perry, information systems director for Sants Cruz County in California, "I'maide Lines," CW, Dec. 26/Jan. 2]. He has the vision to invest his dollars in his group where they matter... at the level where

the work gets done.

In my eight years as a computer consultant, I have seen too many companies waste valuable IS dollars for executives and other corporate figureheads. Meanwhite, overworked secretaries and support people languish appropriate people in angulab

with old systems.

More corporate IS directors should have the chutapah to decline requests from top management for the latton to the control of the control

#### Customers beware

The rules in Bell Atlantic's customer privacy policy ("What you don't know," CW. Dec. 25/den. 2) appear to conflict with one anothre. Specifically, Rule 2 attempts to reassure the customer that the company will "disclose personal information only for limited purposes, such as long-distance hiling, fraud prevention and iew en-

brownest."

Wey noble But look at the end of Rule 2: "Allere [customers] to 'ope out' of marketing lists." Marketing lists "I dear het listed as a "juryone" in Rule 2: We proceed directly from 'need to know' to an impleti talent to sell private information. However the data is cause that mathematica, between the data is cause that mathematica, between the data is cause that mathematica, showever the data is cause that mathematically discussed in the data is a supported to the data in the data in the data in the data is the data in the da

look like corporate change. Jody Roberts Computer Associates International, Inc. Irving, Texas



a Computativadd, welcomes comments from the neaders. Letters may be edited and should be addressed to SM Laberis, Editor in Chief, Computamentel, P.O. Box syrx, 757 Confusion Road, Paranighten, Mass. oxyrol. Fax numbers (poli 875-893): internet: lettero@w.com. Please include an address and phone number for verification.

# COMPUTERWORLD

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Olice Hanage

### The people cost of re-engineering

Roger T. Sobkowiak and Ronald E. LeBleu

he headline read, "Microsoft's Bill Gates and crew strategizing how to move IS professionals off Windows and onto the next platform hased up new pistform promises incredible fenny in technology canability and dolivery. Fasten your seat belt for the next revolution." That may be all well and good, but the sad truth is that many IS professionals are still trying to move from main ames to client/serv

or systems, with all that it implies Almost every IS organization is asking the came two questions: How one we mismate our staff from the "old" systems to the new ones?

Will exervone be able to make the shift? The answer to the just question is a resound ing "no." Doo't even bother trying to save and roendineer every. one For a bost of rea-

sons some rational and some irrational many people don't want to adapt. change or reinvent themselves. The important thing is for

the company and the employee to recognize this sooner rather than later. Sinking thousands of dollars into training that fails to pay off doeso't make sense. For companies that have attempted "people

For a host of reasons, some rational and some irrational. many people don't want to adapt, change or reinvent

themselves.

for an employee who is upable to master the new skills. Another version is a contract that ensures

there is more bad news than good. Unfortunately, organizations are having a difficult time retooling leg

acy people. With unlimited time resources and money it is possible, but most compenies do not have even one of these invuries. They

are generally confronted by a mandate to downsize machines and pro ple. In a few instances when employees he no other options, they are often able to make incredible strides in developing and adopting new skills. But when employees think they have the option to cootloge what they have always done best, they will more often than not

take the road of least resistance and onl not to change. When a company

insists that femer people change their op a set of tools to help employees cope. one is a "safety net" that holds a job in reserve

an employee's continued comployment for a year or two if he does not successfully make the transition. If an abrupt transition is impos-

sible - such as when an employee must keep working on a lemey system while mastering a new one - then the pay-for-skills

mastery seems to work Under this plan, the emplayee is encouraged to master the technology in

stames and is given bonuses or salary increuses as this is accomplished Under these form three critical factors arem

coss: virgency skills and self medication The company has to build and own municate the case of argency: the company most specify and provide the skills training

and the employee must find the motivation. If we need any more proof that re-engine ing of loguey staff is not working look at the rising number of outsourcing contracts. One major motivation for outsourcing is obsolete or potentially obsolete staff. Companies are turning to "professionals" to manage the re-engineering abdicating to the outsourcing come ny the difficult people-management sauce

Sobkowisk and Leities are managing partners at Soft wave Pressir Consesses, San to Memory Conn.

## Windows 95 packs subtle punch

John Gantz

adows 95 may ship late, but I'll het you still won't he ready for it when it comes Windows 95 is m. ing to hit loss of IS shops and departmental training and appropri groups like a ton of bricks. You think that because you've alrendy been through the DOS-to-Windows 3.x

migration, you've got it knocked; how hard could it be to go from one version of Windows to the cext, particularly when the new one has a better user interface, automatic network connections and the much-heroided Plug and Play capability? What's to train? Hah.

The problem is twofold. First, Microsoft will drive Windows 95 into the market faster than the market can educate itself. Second, the annijestions that run under Windows 95 will be far more complex than those that ran under Windows 3.f when it debuted four years ago. When you went through your conversion

from DOS to Windows, the average PC, according to International Data Corp. survey data ran fewer than six applications. Now it runs 12, half Windows and half DOS. How many do you think a Pentium running Windows 95 will house? Besides, what did those earlier applientions netually do? For the most part, they were productivity apps supporting personal work. Now they are likely to be setworked applications supporting workgroup and enter-

rise computing Lotus' Notes, electronic mail, tabase access, client/server business applications ... put this stuff on a per operating avatem, add a little internet connectivity here and multimedia there and you have a training and support dispater in the making Indeed, the flip side of this looming training

and support erunch will be a nice bulse in revenue for companies that get paid to train and support information technology profes-

sionals and end users. IDC senior anaburt Ellen Heart who oliows the information technology eduestion and training market, has pegged U.S. spending on Windows 95-related training - on the un-

erating system and on Windows 95-based apps - at more than

with the arrival of new 32-bit applications and integrated office suites. It will be more customized and more related to the jobs performed with the software than to the features and

\$130 million in 1895 same. What's more, she says, the type of training needed will change in short, for every dollar you spend on Win-

dows 95 - especially when it comes "free with your computer - you'll spend another 25 rents on outside training and 25 cents on out side support. You'll spend at least five times that on internal training and suppo

So if the training community and the support vendors are expecting a spile in demand for their services when Windows 95 hits the street. maybe you should expect a spike in demand for your services. H

you haven't budgeted With Windows sixable increases in training for your mi-OS neur gration to Windows applications 95, then you'd better and networking

needs mean a

discuter in the

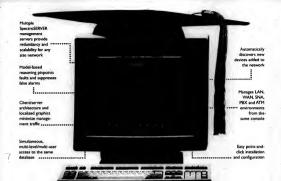
surance Radidea.

makina

expect to compen nate with over-bud get outlays for end PRODUKT STAN There is an all pative, and that's the

status ono But same old, same-old training and support means your company will waste a lot of what you pay for in Windows 90, the new hardware it runs on and the new software you buy or develop. That's like buying a car and not buying collision in-

Gantz is a senior vice president at International Data Corp. to Framinghum, Mass.



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# **Desktop Computing**

# Vendors get support from niche service providers

By Jaikumer Vilayan

When AST Becomes Inc. in faving Calif recently partnered with Memorex Telex Corp. to provide support for AST's Man hattan family of servers. AST became one of a growing number of hardware vendors to turn to specialized service

neosidees This type of partnership could become the norm as vendors increasingly book up with niche service providers that offer single-source support and keep a lid on costs, according to a study by market re-

searcher Dataquest, Inc. Memorex, based in Irving, Texas, is primarily a manufacturer of peripherals such as tape drives, printers, terminal controllers, workstations and display terminals. The company also provides network interestion comicse

Unlike general third-party service providers, niche service companies such as Memorry enter into strategic alliances with vendors based on their expertise in certain product support areas These inctude desktop bardware, technical tele phone support, potebook repair and server support, according to Datament

Under the alliance, Memorex will be a

prime provider of AST server support. Memorex has nearly 30 years of specialized experience in the server support business, extensive experience in networking environments and pumerous certified Novell inc NetWare engineers. Analysts consider Memorex a niche service provider because, unlike general

service providers that offer a wide rappy of support capabilities across the performance spectrum. Memorex's expertise is focused on servers. One of the most significant market

benefits of this trend is that vendors can purchase niche service skills at a costeffective price and pass the savings along to their customers. The bottom line, according to the report, is that niche service providers today can offer better comics at a better rules than communica that claim to do it all.

"Stratogic alliances like these belo rendors broaden their portfolio of services and increase the potential market they can service" said Bolon Dramon an analyst at International Data Corp. in

Consideration Many For instance existomers of specialized service providers can get all their support requirements from a single

source. Specialized service providers such as Memorex are able to offer this level of support at price lower than general service providers' by leveraging their purchase volume, spare parts inventories and manpower Aside from the specialized skills that

niche providers offer, geographic cover age is also able to sway yendors in their favor, Dataquest said. For instance, the report said, Memorex, has spare parts to cations throughout the

country and nearly 200 certified NetWare engineers. It also guarantees a four-hour

postpones time in most foostions In addition in AST which now has three specialized service partners other por hardware vendors have started to link up with multiple providers. For instance NEC Technologies Inc. with

three portners and Dell Computer Corp., with two partners, also bops to leverage their relationships to bring specialized skills to the Even Microsoft Corp. has

said it willoutsource Windows 95 support to third-party ser-Users such as Dave Grubbs, micro-

emputer manager at Nicholson Industries Inc in Seattle are esutious when rainating the perceived customer beneits of multiple service providers. Grabbs, who has been trying to get one support for porting Windows NT to an IBM PS/2 platform, still prefers going to vendors directly for support as long as

"It is not significantly more expensithan third-party support." That way the vendors are more accountable, he said Also, "there is more controlouse training of the service representatives. They have a common database to draw from, and the competency level is superally more uniform" then can be expected from mail tinia thereinarty providers bassid

Communication is key

The crux of the problem is the lack of communication between hardware and software vendors, said Peter Bednar manager of microcomputer operations at Alsco Amerimark in Raleigh, N.C.

While hardware-related problems are resolved more easily, software issues are not Rednescuid Although he swicomes the trend to ward multiple-service partners, he said

Hardware vendors will do better to tall with operating system vendors, it should he engier for new software to recognize the hardware without baving to have dil forwart dalamas for different coffeman

### Driving integration

d recollers (VAR) is

has begun to scout are

nerobin with Testas Instruments. Inc

What companies [

ected and tightly al

Ralph Soucie

### Move slowly

the field in the desktop applications Microsoft's sales and earnings growth have sizzled, while Lotus' reve-

nue from application software has de-Microsoft has attained IBM-style

### Delayed modules limit usability Personal Oracle7 has key omissions

By Howard Millman

coment tools and management ptilities to build cli-

Oracle Corp.'s release of a standalone version of its enterprise-class alone version to me relational database signals its intent to min a footbold in the desktop arena while protecting its existing markets from an expected assault by Microsoft

Part of the new Workgroup/2000 product family, Personal Oracle7 consists of a constrained Oracle 7 data

IBM's OS/2

sups. Future releases will include native language mions for Apple Competer, Inc.'s PowerPC and In our first look at Personal Oracle? we came away impressed with its high-end tools, its scalability and its

visually rewarding and intuitive developor interface. The product leaves no doubt that Oracle knows how to mild a first-rate relational datab And despite its copy name, we found that Personal Oracle7 is more than a

ited to cataloging reci

# THE GARTNER GROUP SAY SPENDS OVER \$40,0 (WILL YOU REACT LIKE TH



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consists of a constrained

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development tools and

While the product's high end tools, scalability and

intuitive developer interface

ase omits replication.

mentary database designer

are impressive, this early

database links, a comple

and multiuser access

management utilities.

#### Personal Oracle7

#### CONTINUED FROM PAGE 43

Unfortunately, perhaps because of the name and some early rumors, we bad expected an "Oracle Lite." a sort of miniaturized version of the full-blown database. Not so, Instead, Oracle delivered what amounts to a teaser: the corrent version of the product is defined more by what it evaluates then what it includes

The four key features omitted from mal Oracle7 are replication database links, a complementary database designer and multiuser access. Ornele said it will add realization and database links (including SQL

Net) to the next release, due out by

#### Oracle promotes Per-

sound Oracle7 as a stand-alone development tool, although isolated might be a better word, in its current form the database runs on one machine with limited connectivity to the outside world and virfually no incoming connectivity. Consequently, developers can build sophisticat-

ed noverful relation.

al databases, buttbey will have to move up to Ornele's more expensive products to deploy them Installation went smoothly: Personal Oracle7 requires 6M bytes to 16M bytes of RAM and 30M bytes to 50M bytes of hard-disk real estate. Our test machine

contained a 66-MHz 486DX2 with '16M bytes of RAM We followed Ornele's recommendation to set the disk cache to a read-only mode. We tested the software with Neache 2's vanced Parameter Editing dialog box, experienced Oracle developers can quickly change a database's initialization pa

Through User Manager, we created and deleted named users and changed passwords and privileges. This mod establishes specified privileges within a database. A separate utility. Password Manager controls access to the data-

Another tool, Object Manager, creates database structures. When we erented new tables, we were somewhat discussed by the delay from the time we elicked on

the table option to when it appeared on screen Developers can migrate existing data

7.0 files via Personal Oracle7's Import module, Record size

is limited to 64K According to Orsele once developers

complete the data base design, they can use a variety of tools for access, including Oracle's Cooperative Development Enviroament 2, Sybase. Inc.'s PowerBuilder or Gupta Corp.'s SQL Windows Evidencing an "any port in a storm" strategy: Oraele esen suemests necessing the database through Microsoff's

Visual Basic applications Oracle's fortbeoming PowerObjects.

reportedly a Visual Basic killer, will enable desktop developers to write graphical front ends to Oracle and competitive detabases Oracle potes that Personal Oracle?

supports up to 25 accesses by a single user on the same machine. Multiuser access is available in Workgroup Server, the next higher level product in the Workgroup/2000 line.



al Oracley includes a number of utilities to kelp users build elient/server applicat for Windows-based workgroups write-behind cache and experieuced no

discornible problems Neache? is part of Symantee Corp.'s Norton Utilities Version 8. We liked the performance of the All common database management

procedures, including starting, stopping, establishing aliases and appending and line arguments, take place in the Database Manager. Through the AdCost of entry Developers who intend to use Per-

will find that its cost is low but the learning curve is steen. The documentation and responsive context segsitive on-line help will aid the understanding of new users. but they will oeed prior knowledge of database design.

Personal Oracle? has an intre ductory price of \$199 until mid-April, when it will rise to \$399. Workgroup Server for Windows NT and NetWare cost \$199 per server and \$99 per client.

A trial version of Personal Oracle? is available via the Internet at ,bttp:/ www.oracle.com. The total file size is 16.5M bytes; users without T-1 access can order a sample CD-ROM for \$15

man is a principal at Data Systems Services in Croton, N.Y., a consultancy that specializesin information systems services.



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#### **Desktop Computing**

#### Soucie

CONTINUED FROM PAGE 43

mind share: No one would ever be fired for huying the Microsoft Office suite. However, someone could land in bot water for deploying it the wrong way.

With papel max on, Microsan scale copporate mars heavily on its productivity software. Office is not only the best-sell inguistic, but it also generally gets the highest ratings in independent reviews. That, combined with Microsit's tight grip on critical industry standards, such as Windows and Object Linking and Embedding, creates a very compelling argument for Microsoft applications.

As much as you might want to see competition three, you probably don't have much choice but to eventually switch over to Office, and you might have to do it even some than you think. Lotar's Smartishiet and twored it retrieved the Smartishiet and twored it retrieved the where a shortage of product development funds causes the products to fall further behind the pace that Merosoft is setting. The inferency of the product then leaded to another deviles in revenue, which in their restricts limiding, and so

Pross upgrade to full version. There are already signs this is hospening at Lotus. Releases 0 of 1-2-3 for Winterborn began in life (spipopriately, in my opinion) as a minor Release 4.1 upgrade, but it was late packaged as a full-version upgrade. Apparently many users effect the upgrade when it would be fet the upgrade what it would be money, which led to disappointing sales in the third manter.

Fin an admirer of the Office suite, but I must sound a note of serious caution to those who are contemplating buying hundreds of Office licenses. Don't underestimate the soft costs of converting documents, particularly complex 1-2-3 files. Many companies have invested con-

saxy compitions have invested onssiderable staff time in creating 1-3 macro to automate tasks such as copyorate unique language and manuscial consolidations. Converting those macros over to Excell in a walk in the park, regardless of what the Microsoft sudesperson might sort awalk in their includes a utility that translates 1-2-3 macros into Excel macterior, the translation process is imperfect. If your 1-2-3 macro is complex, there;

### lessly to Excel. Take your time

May advice is to move slowly: Before you force hundreds of users to couver from 1-2-3 to Except, put a few of your most knowledgeable users to work on converting your important macros. Then use their experience to estimate the resources you'll need to convert all your macros and train end users to use them.

Underestimating these buman costs can torpedo your transition. I advise clicats to convert to Microsoft productivity applications, but I also urge them to first make sure they have the proper human and training resources in place. You should also take an inventory of

corporate intellectual assets that reside in spreadsheet files. In many companies, designated undividuals have entitely of these important files, and the most recent vertices often existed only of individuals hard disks. While taking investory of the files, not easy macross that are not properly documented. This is a key protective measure whether or not you are converting to another aprendicted.

Soucie is a writer and Excel consultant in Winterport, Maine.

#### Briefs

Osborne bundles Warp Australian PC clone maker Osborne Communiters has signed a deal with

Amstralian ru, come maker can see Computers has signed a deal with HBM to bundle OR2 Warp and PC-DOS with all of its systems, replacing Microsoft Corp.'s Windows for Workgroups 3.11. Osborne said it shipped the most PCs in the Australian market in 1994.

Zenith Data, Symantec Joir.
Zenith Data Syrimanie Buildoo, N.Y.
and Symantec Corp. in Cupertine.
Callf., recently signed a licensing
agreement under which Zenith Data
with bondle Symantech \*\*PC tools on
books. The denktop management with the
denktops and notebooks with drives
larger than 2004 bytes. The bundled
suric bas features such as denktop or
protection and configuration tuning.

# IBM OS/2 Warp success IBM officials said they have shipped 1 million copies of OS/2 Warp since the

product became available in early November. They also announced the company has sold more than 13,000 ticenses of OS/2 LAN Server 4.0 in the first three months of that product's commercial availability.

Infand Revenue, hires CSC Infand Revenue, the Unified Kingdon's equivalent to the Internal Reense Service, has reaffirmed there is room for zone than one outsource in an information systems shop. The 69,000-employe tax agency has hired El Segundo, Calif. based Computer Sciences Corp. (CSC) to a threeyour PC procurement and services

CSC beal Inland's data center outsourcer, Electronic Data Systems Cerp., which is a year lato a 19-year, \$1.5 billion contract with Inland. The Inland/CSC contract includes option





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#### Desktop Computing

Gateway 2000, Inc. has announced the Colosilooki notebook

According to the North Sionx City S.D. firm, the 5.7-pound ColorBook' has a 10.3-in. passive-matrix color screen, 16bit stereo sound and either a 2550-MHz Intel Corn 1486DX2 or a 35/100-MHz DX4

The notebook comes with un to a 720Mhyte hard drive 24M bytes of memory one or two PCMCIA slots and serial, par-

allel and VGA ports Prices range from \$3,499 to \$3,599. ► Gateway 2000

935) SZP-2900 Hewlett-Packard Co. has announced

the HP Freedom Series, high-end graph les accelerators for its HP 9000 Series 700 monfretations According to the Palo Alto, Calif., com pany, the Freedom Series accelerators,

based on Evans & Sutherland Computer Corn's three-dimensional graphics technology, support industry-standard OpenGL graphics libraries The accelerators feature full X Win-

dow System support, hardware-accelerated texture mapping, advanced lighting and shading algorithms and stencil planes. They are available as add-ons to existing systems or as integrated fea-

tures on HP Model 715 workstations Prices range from \$65,000 to \$135,000. ► Hewlett-Packard

(415) 857-1591

Eln TouchSystems, Inc. has announced the AccuTouch HL Series of resistive touch screens for liquid crystal and other flat-screen displays

According to the Fremont, Calif., com pany the AccuTouch HL Series features high light transmission and brightness.

The product has a layer of advanced light-transmission plastic laminated to one layer of optics-grade glass to preserve the display's image quality and purity. The screens are available with serial, AT bus, Micro Channel and chipbased controller options

The Accurrough HL costs \$165. ► Elo TouchSustems (610) 651-2340

Ultima International Corp. has announced MediaHouse, a Windows-hased

According to the Fremont, Calif., company, Media House provides search, storare and retrieval for image, audio, video. CD-ROM and document files

Users can organize media files in eleconic folders and larger cabinets that hold multiple folders. Features includes six different file search criteria and a ultimedia slide show for presentations.

Media Honge costs \$69. (510) 659-1580

Ctaritas, Inc. has announced Catalyst GIS+, data retrieval and desktop map ping software for Windows

According to the Arlington, Va., firm,

Catalyst GIS+ is targeted at marketis departments. It retrieves correct data for geographically and geometrically dened trade areas

Database offerings include annually updated demographics. lifestyle segsumer product demand Priore start at \$20,000 for the 11 S. year. ion of the system, which includes data

full cartography and software. - Claritae (703) 812-2700

NEC Technologies, Inc. has announced

the MultiSyne XV 15 monitor According to the Boxboro, Mass., com pany, MultiSyne XV15 provides a flatscreen CRT. 28mm dot pitch, resolution of up to 1 280 by 1 024 pixels and a 60-Hz nofrosh rate

The monitor includes Play and Play technology and comes with NEC's DPL On-the-Fly software for the Macintosh

and TaxCut software for Macintoshes MultiSyne XV15 costs 8455

► NEC Trehnologies (508) 264-8000

Campbell Software, Inc. has an eed Campbell Staffworks 3.0. labor scheduling software for the retail indus-

According to the Evansion, Ill., firmt Comphell Staffspeles 3.0 identifies the best possible schedule based on payroll requirements, eustomer traffic, employee skills, union rales and preferences

Features include support for up to 10,000 in-store departments and job classes, minor tabor taw compliance, user-definable pay classes and the transfer of employee information into human resources documents

Prices start at \$3,000 for a site license Comphell Software (708) 328-3200

Memory International has introduced the MIPC Card Fax/Modem and the MIPC Card Ethernet Fax/Modem, both PCMCIA According to the Irvine, Calif., compa

ny the MI PC Card Fax/Modem transmitand receives data and faxes in either 14 4K hit/see or 28 8K hit/see vers The MI PC Card Ethernet Fax/Modem connects notehook DCs to an Ethernot network and provides a choice of 14.4K

hit/sec.or28.8K hit/sec.capabilities. Prices range from \$199 to \$495 for the MI PC Cord Pax/Modem and from \$695 to \$945 for the MI PC Card Ethernet Pax/

▶ Memory International (714) 453-8008

roduct short Brambiebush Software has an

SolitVu. a word processing add-on for Novell, Inc.'s WordPerfect 6.0 and 6.1 for Windows. The product creates two windownance on the screen and lets users edit two different parts of the same document simultaneously. Cost: \$34. Bram oush Software, New Canaan, Conn (203) 966-0198.



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# gains some ground

ndded

1994, 21,000

'Are we there yet?" That is the states of videoconferencing at most companies today majely because of a lack of stendards and high costs And even though the answer is mostly

'not yet." announcements made at Com-Not '95 recently have taken the industry of least a few miles for-

Lower pricing was the name of the same for PictureTel Corp. in Danvers.

Mass. The company is well known for its promism-ossility and promism-price PCS 100 system. For \$5,000, users set integrated Services Digital Network (ISDN) switched-56 or V35 communica-

tions three video I/O ports sophisticated speaker phone and a multifocus

But with its new \$2,500 PCS50 "we've tried to select features that 80% of the warket will nee," said Tony Paradiso, director of market-

ing for personal systems at Distance/Tel As a result, the PCS 50 weeks only with 56K to 128K hit/ree 1970 and has a sin-

ele video I/O poet, a fixed-focus lens and a beadset rath er than a speaker phone. The system is competible with any 386-based PC, Para

diso said Analysts said Picture Tel's PCS 50 is now competitive with AT&T Corp.'s desk top system and within \$1,500 of intel

#### Corn.'s ProSbare

At those prices, "a lot of people might say, I'm ening to use it right now, and if something hetter comes out, I can still deprecless the imperment in three weers." said Qavid Boomstein, senior vice presi dent of desktop programs at Applied asinosa Telecom, Inc. in Buntaville, Ala However, "we think it peeds to get

down below \$1,000 per sent to see papie growth" in desktop videoconferencing, said Steve Richardson, vice president of product marketing at Compression Labs, Inc. in San Jose, Calif. Compression Labs resells PictureTel and V-Tel Corp. desktop systems. But it

feeuses on group conferencing systems. which cost more than \$50,000 on the high end and between \$20,000 and \$50,000 at However, Compression Labs' focus at

ComNet was not on price but on interna-

conferencing time called Eclins Because the earlier version of Eclinse used proprietary audio and video com-

pression algorithms, "it was acceptable but not douleable" for international comexperientions, said Tom Saczerba, comnications network manager at Modern Engineering, an

automotive compect ing service company in Warren, Mich. "We have us would have to do complhing about it to exploit business oversess." be

With the new 8200 and 8300 systems we can go in with ISDN circuitry and do dial-ups to Europe or put in a dedicated circuit to South America or the Par East

and exchange information. or show CAD displays oncomon "he said

#### interoperability was also a concern for InSoft, Inc. in

has made a name for itself in rideoconforced no with its Communique solto

of products Now, with the \$1,995 Com ique 4.0, InSoft is one of the few vendors that provides interoperability be-

"Previously, [InSoft] was only on the orkstation, so it was cost-probibitive to a lot of cornerations trying to use fyideoconferencing) in a standard business co vironment," said Christine Heckart, director of broadband consulting at

Tolochoice Inc in Verona N.J. "We wouldn't want to tell a radiolin rural Pennsylvania that he had to buy a Sun workstation with this and this software to be able to videoconference with us," agreed Dr. David Channin, a resident in the radiology department at the Hershey Medical Center at the Pean sylvania State College of Medicino In

The center is not using videoc encing now, but it did use Communiq "telomentoring" demonstration, where it discussed X-ray images with enevialists 2,000 miles away. InSoft also announced it has opened

its Digital Video Everywhere (DVE) application development to third-party developers. OpenDVE is intended to encourage developers to write collaborative and conferencing functionality directly ploner licenses start at \$12 995

# Videoconferencing | Aerospace giant seeks enterprise uniformity

As Martin Marietta Corp. grows through merser and acquisition, its engineers are taking the initiative to establish a standardized user interface and comnuter-aided design (CAT) authoric suite that can run on all of the company's Unix systems The standardization effort is expected to simplify work for cogineers who design aircraft, mis-

sile systems and electric cir. To boost productivity and reduce training time in a mixedvendor computing environment, users

formed the Engineering Process Improvement (EPD) task force in 1990 and bired an outside consultant to study the best practices in the aerospace industry Last year, EPI users from 15 hust units decided on a standard set of CAD applications and set out to

buy hardware systems to run them in a quest to save money. Martin Marietta also decid ed lest fell to siem a volume purchase agreement Hewlett-Packard Co. Unix workstations and Unix servers. Martin Marietta chose the HP units for their performaner but the more poses a considerable connectivity

challenge for many of the company's petworks that were built around Sun Mierosystems, Inc. technology, Martin Marietta pians to install up to 1,000 HP work-

stations and servers in the pext two years, ordering as env ee 100 units a month Some will be used in systems shipped to Martin Marletta systems integration customers at government

All together now "We're creating Unix boxes as a commodity," said Steve Butt, an engineering manager in Camden, N.J., who chaired the EPI evaluation had bought 6,500 San Unix morkstations on a previous all

tract from 1990 to 1994, Butt said. in the 1994 bidding process, all vendors "had to demonstrate interoperability with what was a pretty homogeneous Sun Unix not-But users fully expect the Sun and HP

port for Sun's ONC+/NS networking authorses and the industry standard Nat work File System to share data files. The Open Software Foundation's Common Deakton Environment is expected to uni fy graphical user interfaces when it ship on Sun and HP machines later this year

Packaged software is key to the standardination offeet The of tempt is to use off-the-shelf CAD tools that suppliers or developers of those applications sup port" said Tom Smith a sen systems engineer in Martin Mari etta's information systems grou who works at the Ocean Rada and Sensor Sestems unit in Symptomic N.Y. By using both Sun and HP - th

world's Top 2 workstation suppliers engineers can use a wide variety of third party packages that play on both platforms he said

The HP contract is sub to review next year, and tion for a third year Martin Marietta's pending merger with \$12 billion Lockh Corp. in Calabasas, Calif which has a mixed-read Corp. thereas Md.

single set of empireering

seliwers tonis across a

installed systems, but

when possible and half

network, meens all plans are subject to review use reld And at least one out side export, Graham Kemp president of GE Research Inc. in Mountain View Call said the Lockbood merge due this spring, will prome another look at compatible tty issues Singe the U.S. Depart-

of Defense began shrinking budgets for military projects to the early tors have been forced into a consolidation mode, Kemp and Once two companies merge, the process of busiunit triage begins. "You

have to go business unit by business unit," he said. Then computer support b comes a function of what's

it will be hard to stan ize on just one systems sup-Ser, he said, because government work specifies computer systems and requires long-term auditing of excreat sys

When you dig down underness you're going to find that a lot of thes ojects are hardware-specific," he said Martin Marietta, page 57

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### Action integrates workflow, document management

By Suruchi Mohan

Action Technologies for's announcement last week of Action Workflow Doc-Route, a product that integrates docu-ment management with workflow constitutes a coming to terms with the reali-

For many years, "low-end" workflow

Calif., and Sunnyvale, Calif.-based Reach Software Corp. have tried to sell work-

Gost recoducts "But they're all discovered that it is hard to sell a workflow product." said Ronnie Marshak, editor-in-chief of the newsletter "Workgroup Computing Renort," published by Patricia Seybold

Group in Boston. "People aren't ready to spend money on something that doesn't solve a problem."

in other words workflow for workflow's sake is not cutting it; companies are looking for cost justification At the high end, cost justification comes from working with imaging applications. At the low end, it comes from interruting

other technol

ories Marshak At Letus Developes Corp.'s recent Doolfoute in Lotusphere preconfutured to support docin Orlando, Ra. ocumentum for it

ument management applica-Pleasanton, Calif. Saros Corp. in Bellevue, Wash, Novell

Inc. in Provo. Utah, and PC Does in Talla hassee Fla. It allows users of document man agreent appli

entions to perform basic workflow fone tions such as intelligent routing, review and approval automation, notification and workflow management.

For instance, DocRoute works with Saros' Document Manager interface in a Saros Mezzanine-supported environment. Mezzapine is the document managreent program: Document Manager provides routine tasks such as printing. faxing and electronic mail. DocRoute is implemented in a drop zone within the Document Manager interface; a document is dragged and dropped on the icon, triggering a workflow process. The advaniage to users in addition to workflow functions is that they are able to work in - familiar environment.

One of the product's weaknesses, however, is that DocRoute and Mezzanine work off different servers, according to Jeff Peterman, president of Green Pasture Software, Inc., a software developer in Corvallis. Ore. Both products are based on SQL Server but do not read each other's

Also, using DocRoute in the Saros environment can be cumbersome because users have to log in to BocRoute and Mex-

zanine separately. Peterson said. But Marchak said coonell Doolloute in a significant step forward because it refleets workflow vendors' realization that workflow as a single entity does not do

as well as when integrated with another product. DocRoute, priced at \$195 per user and \$2,695 per server, is available now:



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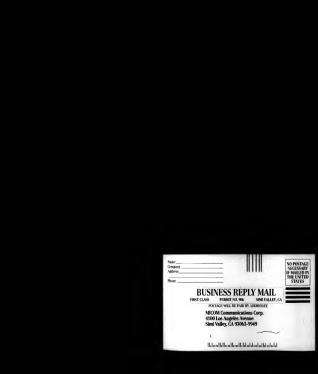


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MICOM



### Users see promise in Intel's LANDesk

Intel Corp.'s recent introduction of an applications suite designed to integrate elient/server LAN management func tinns has received regise from users and anabate Those functions include coftware distribution and metering, hardware and software inventories, perfor-

mance monitoring and remote control. One hete uses of I ANDook Meners ment Suite (LMS) 2.0 is Steven Shuffer network manager at Management Consulting & Research, Inc. in Falls Church. Vn "If I have a problem with a PC in my home office and program a tectical response to it, that programmed response is my cavalry when the problem happens in a remote office,"he said.

#### Martin Marietta

CONTINUED FROM PAGE 53 At Martin Marietta, basic compatibil-

ity among the various Unix systems has already been schieved, users said. "There are a lot of lessons learned, but we're operating between the HPs and Sune "said Randy Crown a systems andlyst at Martin Marietta's Information stems Cn. in Orlando, Fla. "You can log on (with) both of them and get (network) resources and (CAD) tools." Users can read files stored on either system but some projects will require systems from other vendors, including IBM, users said.

Warkgroups immerly in General Electric Co.'s perospace unit, which Martin Marietta acquired in April 1993, were Sun-centric. That prompted users to consider porting some homegrown Sun applications from older SunOS systems to ирдіх

During the EPI evaluation, some users argued that moving from SunOS to Sun's Solaris 2 x would also have required a migration effort and application modifications, "Our perception of porting is that it's probably as hig a deal to move from SunOS to Solaris as it is to port from SunOS to HP." Smith said. "But if you're huying 100 [HP] workstations, you might be able to save so much (on hardware) that you could pay far the port Regimess units that had mixed-yendor

networks in place - particularly their unified naming schemes for files and user identification - were used as models for interoperability. "We required all of at to interoperate so we could put in any iron we needed to use," Crowe said. Business benefits began with the decision to standardize the company's CAD packages, said Ed Mihalik, who represented Martin Marietta's internal IS up in the EPI effort. "It makes it easier for users to share work between different components of the company," said Mihalik, whose unit is based in Valley Forge, Pa. "Once you have people trained nn a set of standard tools, they can move to different husinesses and become pro-

ductive more quickly."

"The shifty for LMSI to back out changes over several generations will save users a lot of time and effort," said Bob Janusaitis, a LAN network managerol analyst at Rusiness Systems Groun in Houston If a newly installed species. of an application fails to work properly any prior configuration can be restored automatically, he explained

supports only DOS and Windows plat forms, "It will appeal to a company that has a large number of intel-based machines, but a company with an equal number of Univ and Intel machines may look for a product that can support both. Intel plans to add support for other operating systems, including Microsoft Corp.'s Windows NT and Windows 95. OS/2 Universit Mediated

LMS is one of the first LAN man sent products to ose the Desiston Management Interface (DMI), which specifies a standard way for PCs and servers to provide information about themselves to management applications. 'The Interface will be a great benefit in the future. Shaffer said "But I haven't seen a lot of DMI activity from other vendors, so the

jury is still out for me an that."



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#### Workgroup Computing

htwave Communications, Inc. has sounced ServerSwitch, a workstation controller that compacts a single Sun Mi crosystems. Inc. monitor to up to 25 different Sun workstation CPUs

According to the Milford, Conn., com pany. ServerSwitch users can access and control the remote CPUs from a central

location for administrators who want to monitor individual servers or worksta-

The product can be cascaded to ereate a natural of company attached to a sixely monitor SamurSmitch costs \$1.950

Lightwaye Communications (2031878,9838 PictureTel Carp, has announced

conferencing and application-sharing system that runs across Internated Servisce flighted Network telephone lines According to the Danvers, Mass., com

nany Picture Tel Live PCS 50 provides a fixed-focus camera, simultaneous display of local and remote views and need control of video window size.

A live Share feature lets users share spreadsheets or other documents, even if only one user's PC has the application.

common clipboard capabilities are in

Prices start at \$2,495. ► Picture Tel (50%) 762-5000

Hammingbird Communications Ltd. has announced Exceed 4 for Windows A 1 PC X Window System server softwar

that lets Windows users access Unix. VMS, Digital Equipment Corp.'s Ultrix and the Open Software Roundation's OSF/1 computers and applications.

According to the Markham, Ontario. firm, Exceed 4 for Windows 4.1 features a performance-optimized X server, improved security and enhanced installation and X server configuration utilities.

An Xuession program starter presides concurrent setup of Windows, Unix, X Windows and character-based applications. The product supports the Unix print requester, providing transparent printing of Windows applications no Unix printers.

Exceed 4 for Windows 4.1 costs \$545. ► Hummingbird Communications (995) 470-1903

Synergy Solutions, Inc. has announced Modern Assist Plac 4.0 nondedicated line

modem sharing software. According to the Mess, Ariz, company Modern Assist Plus 4 0 includes Dynamic Link Libraries for modem clients a Microsoft Corp. Component Object Model (COM) nort redirector, inhound call sunport and Windows Serial Line Internet

Protocol and Point-to-Point Protocol sup-A background queuing feature lets users queue for an outbound line if none is available and continue work on eurrent applications until a line is free and their communications software starts. Modelly Assist Plus 4.0 supports eight

COM ports and costs \$899. Synergy Solutions (602) 545-9797

Warkflow Technologies, Inc. has announced Innovation Project Manager, project management software. According to the Austin, Texas, company, Innovation Project Manager defines, administers and reports project

statue Postnres include ad hoc perotistion for work assignments, automatic creation and adjustment of project schedules from templates and workflowenabled work items Innovation Project Manager runs on

all Notes-supported platforms and costs ► Workflose Technologies

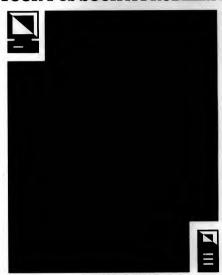
(519) 331-8850

Product short

Clarify, Inc. has introduced the Clear-Extensions Kit for Notes, a product that integrates Clarify's Customer Service Management System with Notes. The kit includes a configurable Clarify integration template, a Notes application data base and source code. Cost: \$10,000 per server. Clarify, San Jose, Calif. (406) 428-



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operating environment. Together. they provide information to PC users in their local Windows environment-even if the information

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work users the capabilities they

need to run their favorite databases



throughout your organization. Our SolarNet and Solaris combination can even boost

zation At from your Windows de

of your network managers. It easily integrates

the performance

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tration, installation and configuration tools, you can make changes to the network quickly, right from a Windows desktop. All of which lowers your cost of ownership dramatically. It also doesn't matter how large your networks are, or how many of them you're managing. SolarNet with Solaris is scalable to thousands of users. And everyone can have all kinds of access-file, print and resource sharing, even remote

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have the flexibility to access their data from any PC in the network, provided they meet your loan criteria.

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# Banyan users cling to Vines system

Loyalists prefer it to NetWare 4.1, NT Server 3.5

By Laura DiDio With Novell, Inc. still commanding so impressive 55% to 70% share of the network

operating system market most of the mdustry views networking with NetWare centric eves.

Most that is but a select cotorie of high-end Fortune 1,000 accounts that remain staunch Banyan Systems, Inc. Vines loyalists

While acknowledging the new and improved NetWare Directory Services (NDS) in Novell's NetWare 4.1 and the superior merits of Microsoft's Corn's Win dows NT Server 3.5 as an applications server the Ranyan installed base remains as fiercely committed to Vines as

any rock 'n' roll groupie in pursuit of an Sakakeeny, an analyst at Aberdeen Group in Boston, said Vines delivers "a hig payoff to ors in terms of lower cost of ownership. ease of me and net

work mainte Although Banyan actually has an overall 8% mar ket share among all classes of users, be said it commands nearly 50% market

share among lamin enterprise mean who have more than 40 or 50 users attached to a single file server In fact, there is only one complaint har

bored by Vines network administrators Many of them have to defend their use of Vines to end more who wonder why the corporation is not deploying NetWare or

"I'm constantly being challenged by users - and even my own wife, who works for a CD-ROM publisher - about why I'm using Vines instead of NetWare or Windows NT Server," said Richard M.

Kesner chief information officer at Bub. son College in Wellesley, Mass. He has an answer though "Sure, the other Instructs operating systems) vendoes are entehing up but who wait two years for Super NOS or Cairo when Vines

has it all right now? Ray Giandrea Jr., senior network speialist at Hanaford Brothers, the parent

INSMINE C'S.

company of Shop and Save supermarkets in Searborough, Maine, said bé has often felt like a "Vines apologist" amongst his users. "It's difficult swim against the NetWare Novell

tide "he said When the rubicot turns to add-on apcations, Barry esor, notwork administrator at Falcontrider Ltd. a Toronto-based mining

company, said he is often on the defencompany, said it is one of here people as many add-on applications as Net-Ware. "We search longer and harder for

and applications, although I think it's worth it." Recour said.

After naing NetWare, Nor Gott er of MIS at General Ameri con Credits inc. in Pittsburrh, conced ed that it is "the best and fast

notwork operating system for LANe. Dut when it

Total assets Enterprise softv revenue growth f 1993 to 1994 Profitable in 12 consecutive quarters ores networks

not even Net Ware 4.1 can hold a candle to Vines. Vines saves [General American Credits] \$50,000 to \$75,000 a year in mainte

nance, manpower and reduced hardware costs " Gottschalk said "It gives me complete control of all my branch offires on the East Coast without requiring any third-party communications prod ucts to monitor remote workstations and devices.

Rural users see benefits The centralized directory services of Vines' StreetTalk bold special appeal for users in curel or remote areas Customors such as Giandrea and Mar-

tin Cury, director of information and technology at the North Slone School Rocough in Barrow, Alaska, said for them, Vines was not just the best choice

avers in more than 100 locations throughout New England and the Carolines. For few

571M

S113M

Vines Street Talk has let users log in to get their electronic mak from any loss tion on the net work. Ginn dress said -Net Wines

4.x's NDS is a prevent nomenna

Giandrea said "We priced to out The admir intrative costs with a Vines network are

were running NetWare. There's no was we could support our existing network with a steff of just two fall-time network administratory or wado with Vines The North Slope School Borough relies on its Vinns WAN network to link to schools and three administrative sites, which soon more than \$5,000 square miles of frozen tunden. Even if the dis triot maid afford a network manager at each location, there is a dearth of skilled management personnel in the far reaches of the state, Cary noted.

a fraction of what they would be if we

Without Vines, even simple tasks like adding users would be a real bendache." Cary said.

Users saidthey experienced almost no network downtime or major problems attributable to Vines.

# Encyclopaedia Britannica shelves its books on the 'net

By Ellis Bookee

Eighteen months ago, Chicago-based En evelopaedia Britannica North America had a hig problem.

Encouraged by one of its university customore to exacte on on-line computation version of its printeditions, the reference work company quickly concluded that the cost of mounting the data for one custom or "would cost 10 times what we could charge in our husiness model," said Pres-

ident Joseph Esposito. How could Encyclopaedia Britannica distribute an on-line reference so each ous subscriber could be added at minimal cost? After only six weeks of study, Encyclopaedia Britannica bit on the potion of using the Intercet, Esposito

In September, Encyclopsedia Britannica North America launched Britannica Online on the World-Wide Web, signing up the likes of Princeton University Star University, MIT and the University of Illi nois. Along with the reference guide which contains 15% of the 23,000 graphics found in the paper edition - the on-line service includes the 1994 Britannien Book of the Year almanac and Merriam-Webster's Collegiate Dictionary, 10th Edition.

"We think it's an absolutely fabalous

product," said Nancy John, assistant naiversity librarian and manager of library systems at the University of Illinois in Chicago, a beta site since last April. The uni versity plans to become a paying custom

Although the school's license permi unlimited access by all of its 25,000 students and 6,000 faculty and staff members, "there are only about 2,000 users



the text and graphics," John said. Another several bondred users can access Britan nice Online via Lynx, a character-only by periext browser for Unix servers. The searchable Britannica Online cont more than 700 000 hypertext links, with

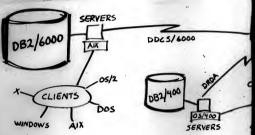
more added daily: The schools pay a site license that came es from \$5,000 to \$35,000. Esposito who considered a per-transaction payment model, said the site-license approach

Encyclopaedia Britannica is considerinstruction of the contract of reto costomers. But as yet, it does not ave a deployment schedule for these

The whole publishing industry is grap er with what business model to use" for delivering content over the Internet, said Encyclopaedia Britannica, page 76

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# ATM steals the show at ComNet '95

Asynchronous Transfer Mode (ATM) has minated the spotlight at recent networking trade shows, and last month's ComNet '16 exposition in Washington was no exception

Telecommunications provider North ern Telecom and local-area ATM player Fore Systems appeared a partnership aimed at delivering end-to-end ATMbased networks.

Northern Telcom will integrate Forc's Fore/Thought ATM management soft ware into its Magellan PassPort and Con corde wide-area switches. ForeThought features apport for LAN and WAN ATM

al circuits. IP multicasting and LAN emulation. This agreement

could have big implieations because the need for end-to-end ATM compostistity in starting to marits up ly bead," said Charles

Robbins, a vice president at Aberdeen Group in Bost Speaking of LAN emulation, Santa Clara, Calif.-based Bay Networks demonstrated standards-based signaling and LAN emulation paing its LattisCell

and EtherCell switches and network interface cards from Interphase Corp. and Efficient Networks. Meanwhile, StrataCom in San Jose Calif., announced support for an ATM service called Available Bit Rate (ABR)

that revenises to dramatically lower the cost and increase the performance of wide-area data communications. ABR permits nacra to dynamically access available bandwidth that other ATM services are not using StrataCom's widearea BPX switch will support the service via a new ATM interface board.

At the same time, users appear to be taking vendor hype about ATM being an ideal LAN backbone replacement with more than a grain of salt. "I wouldn't even think about putting ATM in the backbone today. It is far too immature, said William French, senior project lead or at Merric & Co. in Whitehouse Station.

N.J. "We're not going to buy ATM just beconsolit's ATM Other highlig

the following: · Sure, wireless communication is exive when compared with regular one lines, but it should be, said one

ComNet speaker. "Wireless is like oce front property. There's unly so much [spectrum], so you got to pay for it," said David L. Lyon, president of Pacific Commication Sciences, Lyon knows all out oceans because his company is

based in San Diego, where even the own-and-out can live on the beach. One cellular modern with sunblock, piesse • Internetworking players continue to jump an the World-Wide Web bandwag nn. Sources at UB Networks said the Santa Clara, Calif., company will soon bring a Web server on-line that will offer LIB upers services such as sale support and "virtual trade shows

Claco Systems, offer similar services -d- 4b - 100-b ATATand Letus appeared plans to interrate their respective voice, fax, electronic and messaging applications

Jointly developed products are expected lates this year Perhaps inspired by President Clindress, senior Republican and Democratic congressional staffers said Congress nell submit a himselinean hill throughton derembete the telecommunications inductor transmings competition from forall among long-distance and local telephone carriers and cable TV companies The engine in this legislative train is

opening up monopolies," said Michael Regan minority counsel on the House Energy and Commerce Committee. The bill will be "more deregulators

than the deregulation hill that died in the Senate last year conceded Democrat Kevia G. Curtin, chief counsel and staff di rector for the Senate Committee on Commerce Science and Transportation Stephen P. Klett Jr., Michael Fitzaerald and Gary H. Anthes contributed to this report.

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Software 2000

# WRQ's Reflection eases wireless connections

By Michael Fitzgerald

Would be wireless computer users will have one less step to take to integrate Collision Diental Desirat Date (CDDD) into the corporate infrastructure thanks to the Reflection Suite from Walker Richer

& Quinn, Inc. (WRQ). + A Seattle-based maker of enterprisewide connectivity tools, WRQ has used its multivendor knowledge to create a product that seems to reduce frustration for nireless many. The product bypasses the normal application restart typically required when a TCP/IP transaction losse its commention

In the wireless world, connections are easily lost. This means the user must re-

nection holds the next time around. The Reflection Suite prevents broken sessions by tricking the system into think. ing it is still connected and then re-establishing an actual connection.

Users said they were pleased with the product. "It's a nice feature," said Lee Notan senior telecommunications engi-

near at The Travelers Co. a large insures in Hartford, Conn. Nolan said the WRO product is "spoofing the application, ft

thinks it's still connected." Noian said this was important for client/server applications "where Ithe user) issues a request and maybe it takes the server five to 10 minutes to produce some output. If you lose the session, you have to start all over again But analysts said the product's worth

Short steps When using the WRQ connection, users can

must be kept in context.

'ft's a good step, but it's just anoth part of the lattice that has to be built" before wireless systems can be broadly applied, said Kimball Brown, an analyst at Dataquest, Inc. in San Jose, Calif

The Reflection Suite will ship early th month for \$399. In addition to support for CDPD and circuit-switched cellular, the Reflection Suite includes the following: · Support for standard cor protocols such as TCP, UDP, IPX and Se rial Line Internet Protocol.

· Support for Virtual Device Drivers and Dynamie Linking and Loading. Support for VI320 connectivity, a file transfer protocol client, and printing.

Network management features.

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more out of Windows NT.

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### **Enterprise Networking**

wbridge Networks, Inc. has announced Newbridge Management Execative, a software suite designed to pro vide centralized management of large

According to the Herndon, Va., compony Newbridge Management Executive is made up of four separate products: a

network manager, service director, husiness optimizer and Vivid System

The network manager lets users configure petworks, manage links, monitor operations and manage multitechnology networks from one location Prices start at \$10,000 for all products except the Vivid System Manager, which

costs \$10,000 ► Newbridge Networks (703) 834-2000

Alantee, Inc. has announced two Microsegment Ethernet modules and Powersight network management software for its PowerHub 7000 family of intelligent LAN switching hubs

FDS as a resident instruction of the trees. Data Systems Companion.

According to the San Jose Calif. company, the Microsegment Ethernet modules let network segments support nu mercus end stations and manage small high-performance workerway switched LANs and configure and visu

Proversiont lets users manage

alize virtual LANs. The product includes bandwidth and fault-management tools.
The four-port Microsegment Ethernet module costs \$6,000, and the six-port Mieroseement Ethernet module costs \$6 500 Powersight costs \$4 995

▶ Alantee (408) 955-9000

Cascade Communications Corp. has announced the B-STDX 8000 Multisermine Wat Condend

According to the Westford Mass, com pany, the B-STDX 8000 is a fully redundant, eight-slot modular switch that supports frame relay. Switched Multi megabli Data Service and Asynchronous

Transfer Mode for wide-area network ambications The switch includes Cascade's Opti mum software feature, which eliminates the need for a dedicated line between network switches. A Quickpath feature lets users customize service levels for

specific applications The R-STDY 8000 costs \$15,000 for a base configuration.

# Encyclopaedia **Britannica**

CONTINUED FROM PAGE 63

(508) 692-2690

forms of their product," he

said. However.

Valanskas said

Encyclopaedia

Britannica will probably bave to expand the market for the on-line product

Edward Valauskas, an Internet const tant in Chicago and co-author of the book Internet Trouble-Shooter Valauskas said Encyclopaedia Britan nica is "supremely confident" that its on-

line product will be an adjunct, not a replacement, for its paper editions. "They see it as a way of stimulating sales of other

Just a fraction of II S household have TVs, 90% have dictionaries, but enly

beyond colleges if it hopes to recons what he said was \$4 million to \$5 million in research and development costs.

Already, though, the on-line version has eassed Encyclopsedia Britannica to ditch its nascent CD-ROM product Launched last summer, the \$995 CD-ROM

contained all 32 volumes of the paper edition. "We looked at the entire electronic strategy and tore it up," Esposito said. Advantages of an on-line service vs. a static CD-ROM include the ability to update content, include much more content and upgrade search engines. An enevelpedia on a Web server could also include

hot links to other resources, both free and paid, elsewhere on the loternet. "By the end of '96 or early '96, you'll have a situation when the internet is a very real platform for publishing," Espo-

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THE STORAGE ARCHITECTS

# Migration strategies.

# Users parry with big iron which serves 1.3 mil

Ry Neal Weinberg Daniel Reddy, manag or of technology services at New England Power Service Co., faced a dilemma inst His loomterm out containment strategy was to move applica tions off the main-

frame for his parent

company - New Fo-

stand Florinic System

in Westborn Mass --



thosed a financial management pack-

lioo customers

But the utility nur-

are to replace a home grown peogram and that amosted an immediate need for a third enmore to its IRM ES/9000 mainframe. Today: Reddy's BM mainframe opgrade has been completed

Users parry, page 76

# IBM kicks in with added CICS support

Systems management support planned for OS/2, SP2 lines By Craig Stedman Schulte, an analyst at Gartner Group, Inc. in

Stamford Conn The CICSPier extensions are that later this year will try to make the phrase almed at "filling in a lot of the gaps so that dis "distributed CICS" less of an ecomoron for tributed CICS really can live up to" its corpo large shops facing the nightmarish task of sec rate backboac hilling, he added.

arately managing and supporting the different versions of the venerable transaction monitor. As part of a wide-runsing appouncement latelost month IRM said that in the fourth quarter It plans to extend mainfeams based CICE ass. tems management support beyond the data center to encompass distributed CiCS for OS/2 servers. Other nonmainframe CICS servers are

due to be added to the told prod year Executives from IRM's software inheretory in Hursley, Eagland, said the company also will deliver a version of its CICSPiex System Manager for its mainfrome-class SP2 Unix systems by

the middle of this year. That product will be functionally equivalent to the mainframe CICS-Plex software they added

onitoring through mainframes CICS for OSP servers in departments and

branch offices will be brought under main frame control through the addition of a CICS-Plex agent, according to Geoff Sharman, distributed OLTP strategy manager at IBM, Users who have CiCSPlex on their mainframes would then be able to controlly monitor and manage their distributed CICS environments they selves rather than having to rely ou local per-

Union Bank in Monterey Park, Catif., bas started testing CICS for OS/2 and is looking at using it as part of a branch office autom project that will get under way this spring, said Joe Waynick, assistant vice president of tech cal support at the hank. But he added that CICS-Play support is a crucial element in making a

distributed CICS environment feasible. "if the agent flar OS/21 wasn't available, we wouldn't even consider it because of the overhead involved," Waynick said, "The persona required to have to my out and service each of the branches would be tremendous." Union Bank has approximately 230 retail banking of

fices in California, he auted An information systems manager at a la. surance company in the Midwest agreed that the CiCSPlex extensions are needed, especially for Unix systems. That is because the CICS technology available in that environment "is

"Assuming that IBM can really deliver, this ands like it would bring meaningful technol ogy to the table," said the IS manager, who asked oot to be identified. His company is designing a major Unix-based risk management application that will require a transaction mon-itor such as CICS, he added.

IBM is finally gearing up to deliver "what pe ple thought they already had," said Roy

# SunGard stung by virus

 Disaster recovery provider Sun Gard Planning Solutions last week disclosed that it had unwittingly shipped a computer virus to 35 of its customers after its own in-house virus scanning system failed to detect any problems.

Discovered by a customer in late December, the virus, known as "Antiexe." was embedded in copies of Sunfierd's newly developed Windows based comprehen-

sive business recovery program. Companies use the software to develop contingeous plans for preserving and recovering data in

omergencies As a provider of diseaser recov ory services, "the irony of this is not lost on us," said SunGard Pres ideni Bruce Battier who referred to the incident as a "disaster in nublic relations" for the Wayne. Pa.-based company, a subsidiary

of SunGard Data Systems, Inc. ecurity opgrade nce the incident, SunGard has

beefed up its vinus detection procedures to include two different types of scanning on master disks and random checks on software diskettes created from them Batt-

Ho sise noted that even though the SonGard software cootsined the Antiexe virus, no customers computer systems were infected

To get infected, you would have to boot your system with the disk processes there's no reason you would boot that way." Battler said. Last week, industry experts agreed that embarrassing incidents such as the one at SunGard are not without precedent. 'For as much due diligence that is precided within the industry there are always things that get

through the erseks," said Tari Schreider, a partner at Contingency Planning Research. lor in White Plains "Diskettee with

viruses occur more frequently about," agreed Alan Freedman. a Bankers Trust Co. vice president in charge of global disaster recovery and business contingency

ning "The difference is you don't hear about it. I think Sun-Gord jost sot canebt. Rettier said SunGard responded to the original customer's virus alert by immediately notifying othor customers that had received copies of the recovery program between Thanksgiving and Christmas. SunGard then ran tests of its

own, using in-house scanning soft ware and the same software the customer had used, a scanning program from McAlee Associates. Inc in Can Maton Calif. Four separate tests using Sun Gard's scanning software yielded nothing But the McAfee program traced the virus to one of 12 master

disks used to make copies of the re-covery program. Subsequently, Sunfiard shipped the 35 custom ers a copy of the McAloe software free of charge. Battier said.

action monitor. Schulte said. "You don't want to have to ask branch offices to be that smart. Some new kinds of CKS

Managing far-frong CICS installations today

is a painful process" that puts a beavy lead on

local employees, who may not be conjugged to

deal with something as complicated as a trans-

Windows, DCS and Macontosk upper

processing performance and support two-phase commits between Linius

Adds TONP support for come

CICS for O5/a Version 2.0.1 to CCS clients and other CICS servers. Will also support C++ and FU: languages.

Besides providing central monitoring and control capabilities, the CICS for OS/2 agent would allow asces to take advantage of the CICSPlex software's workload management espabilities for routing transactions around failed servers and bringing them back on-line Shurmananid

leady for market Meanwhile the SP2 version of CICSPley will

play a hig role in IBM's effort to push that system into commercial environments. Adding CICSPlex to SP2 should help dispel its image as 'n naked machine," said Jim Johnson, chair man of The Standish Group international, Inc. a consulting firm in Dennis, Mass The SPI version many a different code has

than the mainframe CICSPiex but will provide equivalent functionality, Sharman said. The SP2 is currently a parallel processor, but IBM plans in 1996 to start offering configuration that cluster together multiple RS/6000 sym rical multiprocessors (SMP). The CICSPiex software is being designed to support the SMF

based approach. Sharman said. Sharman also indicated that IRM cornects by midyear to offer optional user- or neage-bases pricing on the Unix version of CICS. Users car already pay for mainframe CICS according to measured usage, and the A5/400 product is priced by number of users. The price of CICS for AIX is currently tied to the RS/9000 system

on which it is run

# **MOBILE** PENTIUM.



# INTRODUCING THE T4900CT PENTIUM NOTEBOOK.

The 75MHz mobile Pentium" processor from Intel, with state-of-the-art Tape Carrier Packaging (TCP), is designed specifically for notebooks. Toshiba's engineers have crafted the T4900CT using this processor, so there is no need for fans or special cooling systems. Then they've added advances

T4900CT FEATURES: • 75MH: lotel Pentium." 3.3 volt processor, 16KB cache

• 10 4" da. color SVGA TFT-LCD

active matrix display SIC Million Brise (+772MB) HDD

 SMBRAM expandable to 40MB Two PCMCIA skey (10.5mm and 5mm)  VL local-bus video Internated maches accelerates

 65.536 (64K) simultaneous coloni . WAV Audio and MIDI sound Audio sado: headphone/petaken

and merophone NiMH happen for extended life • 3.5° 1.44MB floppy dalk drive Accupone<sup>\*\*</sup> energiated pointing device Pre-mitalled software: DOS, Wandows for Workgroups? Windows Sound System?"

Run Time Video for Windows!\* Finesse<sup>rs</sup> software and Indeo<sup>rs</sup> video Toll-feer Technical Support 7 days a week, 74 hours a day







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indee Index video video

The bulk on sound yearen includes a microphone and speaker, plus ports for an external microphone and speakers or healphones.



Dual PCMCIA expansion slots (Type III and Type III) not simulation enastly—for connection to your LAN, fatheralem and more.

like an AccuPoint" integrated pointing device, 10.4" color active matrix display, and plug-andplay connection to peripherals. You can even blast MIDI and WAV Audio through the built-in speaker or audio jacks for more dynamic multimedia presentations. See and hear this Pentiumpowered touring machine today. Call 1-800-457-7777 for the dealer nearest you.

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The local bands, Fernaum, and Indice values layer are malescarks of Intel Computer on ...

# Users parry

CONTINUED FROM BACK TO

thanks to financing arranged by an unlikely partner - Digital Equipment Corp.

"It's not an everyday occurrence that Digital would be interested in seeing a costomer acouire additional mainframe capacity, but the long-term strategy was to wean (the utility) off the mainframe and onto the Alpha product familt." said Steve Logan, business development manager at Digital Financial Services (DFS) Once part of Digital, DFS is now a subsidiary of

GE Capital, which finances the sale of Digital products. Digital customers deal with mihave been able to get off mainframes entirely while others have seen downsizing actually fuel the

need for mainframe MIPS.

Mass., 59%-01 Mainframe a musi ets said they planned to completely The State University of New York, rebuild decisiona major Digital customer, has been migrating to ellent/server computing during the past several years, offthe mainframe, 25% said Charles Blunt, associate vice chancellor for information tech

Still the mainframe serves a standing pot valuable function, he said. It remains a good central repository for some applications, especially "heavy-duty transaction processing," Blust said. And the mainframe is being used increasingly as a netmont somes he added

Brian Vantage vice president of information technology at Vickers, inc. in Maumee, Ohio, compares moving off the mainframe with "changing the wiring in your house while keep

ing the electricity on. At Vickers, the process took five years, and butaw said in hindsight he would have pushed Jure purchase of Alpha-based machines.

to do it faster. But the company did accomplish its twin goals of saving money and improving its business practices, be added.

Too much too soon

in a recent survey by

Inc in Combride

wester Research

Not every mainframe move comes off without a hitch become I there Owner Don't Co in Tole do, Obio, pulled the plug on a deal to shift from an IBM mainframe to Digital VAXs two years am when third-narty warehouse distribution coffeens failed to meet the company's require-

ments, said Richard Wagner, senior information technology manager. Since then Libber, Owner, Ford has turned to IBM for another stab at mainframe migration. Whenese said The difference is the

firm is advancing one application at a time, beginning with data warehousing The second step will be workflow management Looking back on the Digital projeet. Warner said. 'We hit off more

At New England Power Roddy's strategy has been to work closely with a small number of key yendors rather than "falling into the trap of getting ope of every technology out there." He has put to-

methor a Newell Inc NetWarn.com trie network and has avoided having "a zillion little LANs." "We're not saving the mainframe is going away completely Residy said. He has replaced dumb

terminals with Pentium-based PCs for all service representatives. And those machines "are pulling data from Digital midrange computers well as the mainframe But in the future, "all new projects and solu-

tions will happen off the mainframe wherever possible," he added. Under the long-term financing arrangement with Digital, the savings the utility realizes on the mainframe angrade will beln fund the fo-

Interlinks Computer Se inc. has announced TCPacces Fault Tolerant, an add-on feature to interinks' TCPaccess 3.1 softwere that connects TCP/IP netmoster to MVS mainframes and

SNA petworks According to the Fremont, Calif., firm, TCPaccess-Fault Tolerant recovers from bandware fallures or routing changes by automatically rerouting users to a redundant

LAN controller or router The product features smi ing facilities and Address Resolution Protocol enhancements for controller fatheres. A Galerray Dacmon has Open Shortest Path First and Routing Information Protocol protocols to handle rout-

erchanges and failures Prices start at \$14,000. h Interlinks Commuter

Selences

(510) 657-9800 IPI Systems Inc has announced the Enternalse Steamer Somme & high-performance RAID disk ar-

ray for open systems and IBM AS 400 covironments. According to the Widtham Mass., firm, the Enterprise Stor age Server can provide central storage for up to 16 AS/400, Unix. Microsoft Corp. Windows NT and

North inc NotWare resterns The product has a disk capacity of 2680 bytes and can be couinned with 4.1G bytes of fault-tolerant exche. Both local and remote stornow can be managed from a central location, and independent RAID

groups (Leveis 0, 1 and 5) can be configured concurrently for speoific continuments Prices range from \$1.39 to \$2.50

ner megabate, based on configura-► IPL Suatewa

(617) 890,0000 Legent Corp. has introduced 24x7, an add-on database utility

for IBM's DB2 that works with Legent's insight for DB2 performance monitor According to the Herndon, Va., firm, 24x7 maximizes DB2 availability by dynamically changing

DB2 parameters, adding or detel ing active log data sats and cance ing DR2 threads. The product can run as a standsione batch utility at sites that do

oot run Insight. Prices start at \$3,600 for 20 un-Legent

(703) 705-3000 ShowCane Corp. has same a full read/write version of its PC to IBM AS/400 Open Database Connectivity Driver (GDBC) driver

According to the Rochest Minn. firm, the read/write Show-Case ODBC driver lets Corner Corp. Imprompts and PowerPlay users develop client/server applications against AS/400 databases. The product also lets upors update and manipulate files on the

The read/write ShowCase ODBC deliver costs \$1,000 with a \$1,000 maintenance fee. A server licenar courts \$5 000 with a \$1,000 mainte-

(507) 288-5922

VMark Software, Inc. has an nounced Universe for Windows NT. a postreiational database system that gives Microsoft Corp. Windows NT users access to appl cations that run on large Unix pietforms.

According to the Framing Mass., company, Universe for Windown NT provides flexibility on how data is structured within the database, efficient storage and fast response to queries.

The Server Edition of the prodnot supports a high number of concurrent users. The Workgroop Edition supports applications residing on workgroup servers. The developer's tool kit lets users ere ate applications on VMark's prod-

Prices range from \$295 to \$395. peruser.

► VMark Software (508) 879-3211

Openservice, Inc. has announced Host Availability and System watch 1.6. management software for distributed environments According to the Albany NY firm. Host Availability potifies sysms administrators if a remote host is down without politing from

a central bost, which cilmin two-way traffic on the network Systemwatch 1.6 monitors file systems, mail queues, performance, applications and databases. The product alerts the admin istrator when problems arise and

Host Availability costs \$195 per client Systemwatch 1 6 costs \$395 per client and \$7,995 per console. (618) 466-1400

# Product short

propriate action

Piresign Computer Co. has intro duced Outbound for Unix, unat tended data transfer software. It performs antomated data transers between mainframes and Hewieti-Packard Co. workstation running HP/UX. Cost: Starts at \$11,250 for the host component and \$855 for the workstation com ent. Firesign Computer, San Francisco, Calif. (415) 596-7228.

# Briefs

Storage Tek combines units

Storage Technology Corp. is combining subsidiaries XL/Datacomp, Inc. in Liele Ill., and Lago Systems, Inc. in Los Oatos Calif., into one subsidiary called Storage To Distributed Systems Division, Inc. Based in the subsidiary will focus on storage facts for distributed, open systems.

# CSC to bandle Rell data center

nter Sciences Corp. said it real tre seven-year, \$200 million acres ion agreeat with Southern New England Telenas Corp. to take over the real Rell operating company adata center

# inGard teams with EMC

SumGard Recovery Services, Inc. in Wayne, Pa., has signed an agreement with EMC Corp. in Hopkinton, Mass., to jointly market an electronic mirroring product based on EMC's Symmetrix Remote Data Pacility (SRDF). Under the agreement, St Gard will provide customers with electronic

mirroring espablities using EMC a SRDP microcode, which was designed for use with EMC's Symmetrix 5000 Integrated Cached Disk Array subsystem

stributor buys software suite b Evans Farms, Inc., a Columbus, Ohio pork sausage distributor, has purchased a suite of manufacturing and distribution software modules from JBA Internation Inc. in Rolling Meadows, Ill. It will use the dules to aptomate manufacturing and ition at its food product and special

Amdahl to sell Cray servers Joseph Zemke, president and chief execu-tive officer of Amelahi Corp. in Sunnyvalo,

Calif., confirmed last week that the company had signed a deal to recell Cray Resear Inc.'s SPARC-based CS6400 commercial server. The Cray machine will be a high-one addition to the SPARC systems Amdahl aldy gets from Sun Microsystems, inc. The reement is expected to be announced orthy Zemke said. Meanwhile, Amdahl ne this week to expand the number of op platforms supported by its Huron

# COMPUTER PRESS ASSOCIATION READER AWARDS BALLOT

SEND OR FAX ENTRIES TO COMPUTER PRESS AWARES, 2 FLOTD DRIVE, MOMET ARLINGTON, NJ 07856. FAX ENTRIES TO (201) 663-5140. ALL HOMINATER ENTRIES MUST HAVE APPEARER IN 1994. HOMINATIONS MUST BE RECEIVED BY FEBRUARY 28TH.

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Nearly all editorial awards are decid-These are the stones we have submited by committees of experts who or and review entries and use their best judgment

to decide which publication or article is best. There is nothing wrong with this process - and it has certainly produced many awards for Computerworld - but. frankly, the opinions of our readers are more important to me than the opinions of experts. It is readers, after all, who are best able to judge the quality and usefulness of the material they read. And it is readers - not experts - for whom we

So I am very pleased that, this year, The Computer Press Association has created a new category of awards for their Tenth Annual Computer Press Awards: "The

CPA Reader-Chosen Awards.\* These awards will be decided by the votes of publication readers. It is your chance to make your opinions count. I, for one, will be very interested in what you have to say.

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> Bill Laboris Editor in Chief

TENTH ANNUAL COMPUTER PRESS AWARDS, 1995 The Computer Press Awards, co-sponsored by

3M Data Storage Products and the Computer Press Association (CPA), honor the top journalists who excel in their coverage of information technology. As the oldest and most covered honor of its kind, the CPA provides a forum for technology journalists

to be recognized by their peers. COMPUTERWORLD sed for review by the CPA. Please feel free to nominate these or any other smides yon've enjoyed during the year.

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- (August 15th, Oct. 3rd, Oct. 31st) · Is COBOL Dead? Alan Parsell,
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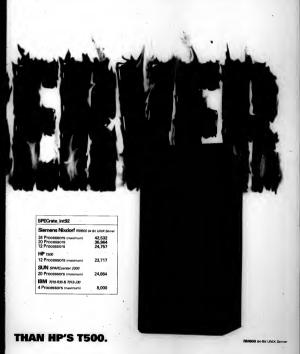
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# Vendors fudge on product ship dates

Delays, delays, nothing but delays

An increasingly common prictice emone software vanders is to avoid specifying ship dates for new products, save for vacue time frames. The factic can drum up user interest in future goods without

locking suppliers into firm deliv-But users can be left hanging, wondering when or if they will receive promised products or feefeeling misled or shortchanges once a product finally ships For example, informix Software Inc. in Monie Park, Calif., created

high user expectations when it becon talkand about its object, based New Pas fourth-mounties Isnquam in mid-1963. Informir offi cials touted the product as a socalled second-generation elientserver development tool that could solit or partition application logic between the client and server. Yet when New Era 1.0 shipped last

# Methodologies sought to solve client/server puzzle

The days of hit-and-run client/server de opment are rapidly drawing to a close as in-formation systems managers seek to bring those tools under the control of more formal, standardized processes.

Traditional mainframe-based software devolcoment methydologies are not the answer because they are often judged inadequate to manage the building of client/server opplications. Their most frequently cited shortcoming is that they assume a monolithic implementation - mainframe plus terminals. Therefore. these older methodologies also cannot support the more complex process of ellent/server dealen, with its multiple disparate processing resources, networks and middleware.

Consequently, users are either roll Ing out their own methodology or craluating a new class specifically designed to manage client/

server development.

Customers are setting a sm selection of off-the-shelf wares.

This week, Rockville, Md.based Intersoly, inc. will unwell a version of its Excelerafor II analysis and design software for object-oriented elient/server application development.

Separately, LBMS, Inc. in Houston plans to release a Windows-based Process Engineer this month. And Will help you get a handle ructured Solutions, Inc. in Atlanta recently released a elient/server version of its Does not drive your

AD/Method software But with almost as many methodolories becoming available as there are cli-

ent/server tools, the real issue for users is that there is so standard approach for managing ees, said Donald DePalma, a senior analvat at Forrester Research, Inc. in Cambridge,

Yet another issue is the fact that "none of this systems development life eyele stuff is broad enough or robust enough for client/server development," said William Trantez, senior vice president and chief information officer at Pro-dential Insurance Co. in Roseland, N.J. "How do you deal with "the systems development life cycle - and security - in a very dispersed operational environment, "especially as client server applications become more robust and more interactive? That's going to be a prob-

At Sprint Corp., client/server development began to crop up around the company about

on application

Dy mid-spos Upgrades for DB2/2 and DB1/Goop databases Before end Before end

lures. Or the method can backfire and send users elsewhere for

GUIs on financial packages

For example, Consolidated Edi son Co. of New York, Inc. is a large IRM DR2 mainframe shop But with pressure to downsize and become one officient in the face of pend ing decognisation in the utility in dustry, the company did not wait for key upgrades to IBM's Unix and OS/2 databases. It bought Sybase.

Inc detabases instead Version 2.0 of IBM's DB2/2 and DR24000 were expected before the end of just year. At least that is what Steve Mills, general mans of IBM's Software Solutions division, told DB2 user group attend ees last May Indeed, beta testing ity will be "based on how well the beta does," said Janet Perns, director of database technology of IBM. "If everything goes terrifical-

ly, it could be first-balf" delivery. Such detays are often just a mat ter of yeadors' underestimating the work, said Judith Hurwitz, an analyst at Hurwitz Consulting Group, Inc. in Watertown, Mass. These are very complicated products, and so much can hold you up," she said referring to the erous hardware, software and operating system combinations of work of most user sites

July that conshillty was missing Despite users' impressions to the contrary, "we didn't say that

partitioning would be part of the initial release," an informix spokeswoman said. New Era 2.0. slated to ship is six mostly, will contain the feature, she added Duniop Tire Corp. in Buffalo N.Y. rolled out Gracie Corp.'s financial and manufacturing applieations despite missing graphical user interfaces (GUD, Grarle said it would have GITIs on its nunlies. tions before the end of 1994 but the key client/server feature has been

delayed until April, said Ray Lane, president of worldwide operations at the Redwood Shores, Calif. Gupta Corp. in Menlo Park. Culif. plans to ship a major upgrade to its SOLBase database

pext mouth, but some users who attended Gunta's developers conference last June thought it would be out before the end of 1994. Indeed, product managers at the show told users that SOLBase 60 would be ready for initial release before the end of the year. The product is not late, said Matt Milier, director of product marketing at Gupta, because "we always said we would ship the product when the quality was acceptable. We've not publicized a ship date." two years ago. At that point, the IS departmen

the control of a more formal methodology, saud Steve Sage, a technical specialist at the tele phone company's Kansas City, Mo., offices Sorint identified specific requirements that client/server development methodology

should address, including the need to handle more complex requests and soliability formed and to accommodate the increased use of projetymne canabilities

Client/server development methodologie and also take into account the need to partition processes and date. And they should no knowledge complex technology architectu that lacinde networks and middleware, said Fred Hearly, director of client/server develop ment and laterration services offerture of Computer Tank Group, Inc. in Chattanoogs. Tonn. Hencke's group contributed to the development of the intest release of Struc tured Sciutions' AD/Method for Cli-

ent/Server and will deploy the meth odology throughout Computer Task Group's ormaigation in the next three to four months

bossid

Points to ponder Users agreed that it is important to look for Bexibility in methodologies and to

stev eway from those the lock developers into code repression or specific devel poment tools. At GE Capita Mortgrage in Raleigh, N.C. methodologist Jack Rabres said his company avoids the code-dependent nements of its computer-aided software engineering (CASE) suite and takes a data-centric ap

proach to analysis. These steps yield b fits. Rebreu said, including

the ability to use the same analysis and design methodology regardless of whether the application is implemented in Smalltalk, C++, Microsoft Corp.'s Visual Basis

or Powersoft Corp.'s PowerBuilder. You will never find a methodology that does everything for ellent/server - not yet," said John Collins, CIO at Plaza Home Mortgage Bank in Santa Ane, Calif. His group has devel-oped its own that is based in part on some of the senets of traditional CASE methodolo-

gation takes to establish a client/server methodology, having one can help control the runaway costs of client/server applications, accordingto Sage

"Client/server increases complexity, and so it increases maintenance and costs. Having a methodology helps a lot with that," be said.

# Need to reach all kinds of data fuels retrieval tool boom

### Users look for Internet access, communication with relational databases in public and private on-line services.

By Kim S. Nash

Image, and text-retrieval producté are coming out of the woodwork as information systems managerestart to build unplications that organize the estimated 80% to 90% of corporate data not stored Such newfangled applications dish ont data that does not immediately lend it-

self to nest relational or hierarchical

structures. But text and image databasas - which store information in abunta suffice than sixed some and tables - so quire appropriate indexing and query

said Mike Farrell, executive vice president of marketing at OpenToy! "We have to be there too with SGML and HTML or we risk losing husiness," Farrell said. An Open Toxt Subarter kit for five meens costs \$15,000 and includes the server

emery nide Just as on-line access is important no is the shility to talk to existing relational

engine, client software and graphical Indeed, Dataware Technologies recently unveiled an application program-

ming interface (API) designed to link BRS to databases that understand SQL, the standard means of talking to a rela tional database Called Total Recall the API were created in the UK by Kinesia Computing Ltd., but Deteware Technol. ogies has obtained the right to sell it in the U.S. and other countries, company of-

Which route would you take



the databasimages stored in DB2 es," said Roland Cole execdatabases, according to a source close to the utive director of Software Pat-

ent Institute Inc., a nonprofit successy in Ann Arbor, Mich. The institute is amassing a giant text database of soft-

ware manuals natent documents and other material for computer industry historians and the U.S. Patent Office. Cole chose BRS, a text database from Dataware Technologies, Inc. in Cambridge, Mass. The database server's shil-

ity to allow a variety of clients believed sway his decision. Cole said For example.

Cole said he wants to give Internet users acress to his database software history when it is finished and BRS was designed

company.

to give way. Two to ee lang silo rage price tags for a to accommomultiusertext date dial-in no se ranged from .coo to \$40,000.

In fact, Inter net accessibili ty is a setting point for many textand

image-retrieval products. OpenText Corp., also in Cambridge, recently announced OpenText 5, an upgrade to its text database that lets users perform searches and queries graphically. The enhanced version also supports Standard Generalized Markup Language (SGML) and HyperText Markup Lan-

\$15,000 is more the

gasge (HTML), two popular file formats for posting documents to the Internet. Health care, law and other vertical markets that have begun to adopt text products to handle their huge volumes of data are also increasingly participating



Other parallel database software



New DB2 Parallel Edition

#### Application Development

Versant Object Technology Corp. has announced Versant Argos, a Smalltaik

development environment.
According to the Menlo Park, Calif.,
Cottpany, Versant Argos is based on
ParePlace Systems, Inc.'s VisualWorks
and provides object modeling, development and devolopment on Versant's object

database management system.

Versant Argos automatically builds
the Smalltalk classes that make up the
code. All VisualWorks functionality is

available, including access to legacy data in major relational databases. Team-based development features include versioning capabilities. Prices for Versant Argos start at

i3,000.

Fersant Object Technology

(415) 329-7500

Micro Focus, Inc. has announced Micro Focus Dinlog System 2.5, u Cobol development environment for graphical user interface client/user and datahase appli-

entions.

According to the Pale Alto, Calif., company, Micro Fucus Dialog System 2.5 includes a complete relational database from XDB Systems, Inc. for fast application residencies.

A Visual Application Manager provides a visual man of the structure of a Dialog System screen set and the retationship among windows, dialog boxes and coherols. Other features include an enhanced debagenvironment and is Connection Manager that lets users define links between the user interface and the application order.

Micro Pocus Dialog System 2.5 costs \$1,250. Micro Pocus

Micro Pocus
(415) 896-4161

Object International, Inc. has an
nounced Tourthen()++ 1.2. develop

ment software that provides synchronized object modeling and C++ programming. According to be Austin, Texas, firm, TogetheroC++ 1.2 automatically produces documentation that is ready for

Togethen/C++ 1.2 automatically produces documentation that is ready for Windows help file generation along with the code Both the object model and the C++ code are synchronized when changes are made.

Other features include a C++ parser, view control over model elements, files and directories; and automatic or maual layout of object models. Additional object model and language-specific fea-

tures are included.

Together/C++1.2 costs 8997

▶ Object International
(612) 785-0202

Corporate Computing International bas announced RadPath 1.1, graphical user interface (GUI) development software for client/server applications. According to the Bannockburn, Ill.

company. Radifuth 1.1 breaks down the GRI development process into three paths — infrastructure, management and development are polices of the applications can be built and tested while other pieces are in design. Each path takes the user through u customizable series of tasks and choices can be made to the control of t

reports are included to provide a consistent development process.

RadPath 1.1 costs \$1,565 for u singleuser license. An annual 10-neer license

Costs \$12,995.

Corporate Computing International

(708) 374-1995

C++ development software for graphieal user interfaces (GUI).
According to the Mountain View, Calif., company, Hog Views 2.0 integrates interface components, two-dimensional graphics and object behaviors so GUIs created with the product interact through images and graphics instead of

A huilder and 2-D graphies object library are included. Users of other GUI huilders can use llog Views 2.0 to complement interfaces with graphics and ob-

Bog Views 2.0 costs \$7,500 on Unix platforms and \$5,000 on PCs. It includes source code so developers can create their own GUI builder.

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Parallel Function	Oracle Parallel Query Option Version 7.1.3	IBM DB2 Parallel Edition Version 1.0
Optamated for Parallel	No.	Yes
Consistent Architecture with SP2	No	Yes
Index Seas	No.	Yes
Insieu .	No	You
Selects	Yes	Ìes
Updates	No	Yes
Deletes	No.	Yes

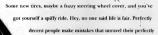
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COMPUTERWORLD

# Management

# By Roger Kay

PLAYERS IN the traditional

paper forms industry are in

A LIFE AND DEATH

STRUGGLE in a

shrinking market.

To survive, they're counting on IS to help

them break in to

the growing electronic

forms and services industry.

ou might think an industry that prints stock certificates would have an easy time making money. Think again. The once placid and profitable paper forms business is on the ropes.

The large, previously stable forms printing companies have been overtaken by the fast-growing electronic forms industry, which is driving the old-line companies to the edge. Some paper forms companies have a shot at getting back in the ring. But they must launch new information technology-based business strategies to quickly remvent themselves be-fore they go out of business.

"Long term, I don't know what they're going to do for a living," says Lisa Thompson, an in-dustry analyst at Punk, Ziegel & Knoell in New Voels

York.

These companies face a double-barreled threat: They must deal simultaneously with a major shift in technology and a shrinking market. Stored electronic forus — which companies can print for themselves on demand — are rapidly replacing proprinted paper forms. Paper chase, page 88

# Paper chase

CONTINUED FROM PAGE 87

Electronic forms are not only more convenient than paper but less costly. Thus, computerization is causing a collapse in

total forms market revenue.
From the point of view of these creatingsiants, information technology to eating their hards today, but it is also offering their hards today, but it is also offering their their points of the control of their first many be able to beverage their knowledge—built over the years—of the business, may be able to beverage their knowledge—built over the years—of the business, but the processes that require forms and win a slice of the new retert vade forms market patch can make quick lareads fort the revelectronic sector and rapidly shift their corporate emphasia from manufactur-

All this puts the information systems organizations at these companies under personal regularity of the state of the state

Executo the rescue
One paper forms company that is fully
committed to an information technologydriven, strategy is force business
apper forms printer in North America,
with \$2 billion in yearly revenes that
commitment is gertapa numbered better
demonstrated than in the pedigree of
Monitor president and their forcestorydirect Reto Brunn, who was formerly seeond in command at limits year.

and in continuous of only Scory.

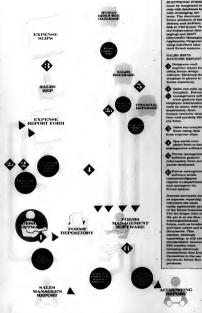
Moore also apprended the sensire Hisposition to vice president of information produced by the sensire Hisposition to vice president of information between the sense of the sense of the sense to sense last year, optilized the Sense turing and manricing. Previously a consultant at Gartane Group, Inc. and Notan, Norton & Co., McKay was charged with orchestrating some dramatic changes in the 18 decouraged.

We're re-engineering our whole business." MeKay says. In 1984 alone, Moore closed plants, laid off workers, revanged its order-to-cash conversion process, restructured manufacturing and took other costs "out of the equation," MeKay says. The company is also getting into the electronic forms industry," and we reasing the technology to make that fig."

MeKay says he looks back at 1994 as a

McKay says he looks back at 1894 an a year of positioning. "We were able to drive the re-engineering design to a point where we could go into development," he says. And "the company has bought into the bigher IS funding levert than it has ever accepted before." McKay anticipales: 1998 will be a year of rolling out owe systems. "I delivered the first release of my re-engineered system" in Annuary. he

 Some of this year's investments in iS were designed to cut operating costs as well as enhance customer service.



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McKuy expects to roll out a number of efficiency tools including sales-force automotion production scheduling and shopfloor automation systems. The sales ating order entry from the field and making some pricing decisions remotely. The anduction scheduling software will manage the how (web press or blectro iet, where (Moore, customer site or third narty) and when of production. Shop-Boor systems directly monitor and measure production processes, gathering time and materials usage data, which then becomes input for cost-management programs.

#### The move to services in addition to investing in its internal in-

formation systems. Moore bought a 20% atake in JetForm Corp., a \$12.5 million electronic forms software supplier in Ottown and has an ontion to acquire more. The JetForm acquisition is a critical part of its strategy to become an electrooic

forms services company Will Moore be one of the survivors? The early indicators are good. The company recently reversed three years of declin ing profits and McKey estimates that are "a variatioo on systems integrat from the traditional paradism of forms. McKey says The company's enal is to bring its expertise to bear in the automa tion, management and maintenance of forms to help large customers better deal with the daily movement of information. McKey points out that the company can offer a controlled efficient way for matomers to change their forms as well as

manage their paper forms inventors in an example of the new type of reistionship McKay describes how an insueanno industry client has naked Moore to manage an electronic repository of forms in a server on Moore's premises. which the customer will be able to access from its locations across the U.S. The repository will act as a distribution con for companywide forms. From a central territor men recomment will be oblete one tinually top off insurance policy language with the intest legalese and update its policy masks or templates

The agents will be able to pull down any policy form to the local environm fill it out and then route it on for printing to one of three locations: the departmen tal buse printer for low-volume jobs, a

whenever necessars

# 1500

#### get into electronic media

We recognize that we need to be in this business," says Charles Beams vice president of IS at Data Documents. Bauman's recent promotion from director to CiO is one sign of how key IS is to the company's business strategy The company has jost announced its Odyssey integrated Service, a package

developed in-house that ties together proper and forms analysis workflow simplification, electronic forms comnosition, database mapping, electronic transmission (including electronic data interchange and print routing), sophisticuted enstemization functions, billing and inventory management. With Odys see Data Documents plans to offer a full menn of work-analysis and forms-man-

We're going to leapfrog our competi tion," Bauman says.

Standard Register Co., an \$800 million forms printer in Dayton, Ohio, has several applications up and running that are based on software from F3 Software Corp., an electronic forms company in Pt. Lauderdale, Fla. Standard Register turned in record results in the third quar-

er of 1994 However more formidable compe tion is coming from outside the industry. Software developers are moving in, par ticularly several young, lean firms that are achieving phenomenal growth by



specializing in electronic forms. Thes smaller developers may find that partnering with the established forms com es is convenient for the moment, but over the long haul they may want to ap-

### Forms to function

some of Moore's traditional base is safe That base may be sufficient to see the firm through a transition period in which there exists a hybrid environment of both paper and electronic forus. Winners in this market, McKny is betting, will be companies that move smartly into services, a migration that seems to echo the nath nervicesty taken by the older compater companies, such as Uniava

McKay says Moore's salvation lies in providing services based on its knowledge of workflow, which it acquired by designing thousands of forms for clients over the years. By helping customers innte some of the costs associated with handling forms - costs that are at least an order of magnitude greater than those of the forms themselves - Moore's tives hope to capture revenue beyond the company's traditional base Moore intends not only to provide electronic forms software but to serve as a render beloing clients make their own one to an electronic forms envi-

The smart ones [in the forms indu tryl can become players in a much vaster world. Jonel in which they never particinated even though they had the knowledge base," says JetForm Chairman Abe Ostrovsky, referring to the dynamics driving his partnership with Moore. The kind of services Moore can provide

Xerox Corp. DocuTech printer in the production department for midlevel requi ments or one of Moore's large printing fe-

cilities for long rups. Moore will also step up its efforts in direct-response marketing (customer databases merged with large-run color printing for direct mail), business commanications (high-volume communications between a customer, such as the Internal Reveous Service, and its users, in this case the general public) and data management (for example, providing

Multiple Listing Service books for the real estate (populary). "These are growth businesses for us. \$130 million to \$170 million business but they have to have time to ramp up,"

McKny save. Overhauling its infrastructure whi staying profitable has been a challenge for Moore, which last year took a \$210 million restructuring charge and cut thousands of staffers. However, the oon nany expects to expecte substa new revenue through its recently inke nartnership with Electronic Data Sys

Of course, Moore isn't the only true tional forms company pursuing informa-tion technology-based strategies. Data Documents, Inc., a \$200 million forms ony in Ozoba, shares the sense of presery about rapidly restructuring to

eres Corp.

reach their markets more directly.

Delrina Technology, Inc. in Tore the largest electronic forms com troduced FormFlow in 1990. It sold roughly \$75 million worth of the forms application creation and routing soft ware in 1994, according to Eric Stevena. Deirina's marketing manager. Steve says the company is growing at 115% to

Ostrovsky says JetPorm is experies ing similarly explosive results. "As main frames melt into networks, electronic forms are the natural medium to continue and display information in an organized manner"he save

Formidable software dants Competition is also pouring in from th established software companies, which smell scorching market potential and have taken up positions in anticipation. Microsoft Corp. in Redmond, Wash. weighs in with Electronic Porms Designer. Lotus Development Corp. in Cambridge, Mass., offers Forms, WordPerfeet the Novell Inc Applications Group

in Orem, Utab, offers in Forms For some lurge printers, the move to electronic forms may oot be enough. Duplex Products, Inc. in Sycamore, fil., which had been bemorrhaging slowly for several quarters, reported a \$16 million loss for the year ended Oct. 31, 1994. The company recently replaced its enti-

management team Mike Wilson, Duplex's newly app ed vice president of information services, says, "IS will play a vital role in get og the company where it needs to be The future looks murky for the paper

erms industry. Some of its tradi base will remain, but it will lose large por tions of formerly profitable businesses new competitors from the IS industry. Although the printing companies are attempting to get into information technolory-driven businesses, some of their new technology partners are probably going to start looking like competitors once they bulk up a bit. As in most Durwinian situations, the

rong - those with large revenue bases of Portune 1,000 customers - are the ost likely to survive. Clearly, their via bility will be enhanced if they realously embrace information technology, It's honded their way in any event.

Kay is a freelance writer in Wayland, Moss

Allan E. Alter

# Answers lie with the customer



washing away old as sumptions and erro there's no better ser than a good system for collection

tion. Just ask Whirlpool. Whirlpool's Customer Quality Information System (COS), which collects data from warranty claims and Whiriol's consumer bot line, has been up and running since July 1983. And the

mandated designates and manufacturing eers who use the system base learned something surprising: Even after more than 80 years in the major appliance business and zillions of dollars sacrificed at the altar of market rearch, they can sometimes make dumb na dist design declaions

#### Coming clean Late last year, Jack McGreth, the nation-

al director of Whiripool's Consumer Assistance Center in Benton Harbor, Mich. sired some dirty laundry at a conference on product development and concurrent engineering sponsored by the Manage meni Roundtable

For example: You'd think Whirlpool's designers would know that people lose their keys sometimes. But for more than 15 years Whirtpool's engineers thought a remov able key was the best way to childrenoof

their kitchen trash compactor. Troubte is, mome and dads were calling Whirlpool to get reniscements for the keys they lost. CQIS belped Whirlpool discov or the scope of the problem, and the

key was replaced with a nonremovable dispenser in its machines? Those ringe

child aufory lock Don't you hate pitchers that don't have snouts? Only a sponge manufacturer could love that omission. Well for years,

Whistoool dustement didn't out spouts on KitchenAid blenders. The design wasn't changed until COIS revealed

that consumers were baying trouble pouring thick linuids like cake batterout of those Nenders Whirlpool also found that

in its onest to win more housing contractors as cus tomers, it was losing favor

with new home owners. In order to lower prices on the line of appliances it sold to

contractors. Whirlpool eliminated nonuler feetures For instance, the company began selling one-speed-only washers to contra tors. Birmistoke because the cleaning of different clothes requires different

washing speeds. And how could any dishwasher ma Inclurer perfect to include a rinse aid

aids are needed to keen all terrorers and glasses from spotting. But when happy home owners loaded their Kitchen Aid dishwashers for the first time they found

a hole with a plug instead of a rinse aid dispenser Thanks to CQIS, McGratk says, Whiripool's product specialists quickly found out that home owners were raising the roof over these one-speed washers and dispenseriess dishwashers.

Within months, the compa ny stopped selling those dels to contractors The moral is simple: It's

hard to underestimate the value of a first-class system ing together customer feedback It's probably one of the most valuable projects an 18 team can undertake. If one of the oldest and fastest-growing home appliance companies in the world can liscover it was doing a poor job listsning to customers, so can your company.

Alasmia or Communication and described and true made agement.

ATAT Corp. in New York has a the appointment of John T. McGee, 50, as senior vice president and chief infor mation officer of the ATAT Universal Card Services credit-card subsidiary: Be replaces Jim Kutssch, 44, who held the position on an interim basis and is being reassigned with the credit-card unit's in formation technology services group Prior to the appointment, McGee was a consultant at Wellcome PIC in London. Prior to that he was vice president of cororate information technology at Glaxo, Inc. to Durham, N.C.

Texas Instruments, Inc. in Dallas has ounced the appointment of Jodie N Ray as CIO and manager of the compamy's information systems and compose division, which oversees IS for the comnany's worldwide operations. Buy you places Robert McLendon, who recently was appointed president of TI's software



Equitable Life Assurance Society of the United States in New York, a subsidiary of The Equi table Cos., has an nounced the appointment of Lee S. Billis, 48, as senior vice president and CIO Billis was formerly a vice provident

Entex Information Services in Rye Brook, N.Y., has announced the app ment of Lynn S. Wilson 30, as vice preident of information technology and CIO. He will be responsible for directing the company's information technology strat-

eey and overseeing staff support at En ter handonarters and its 45 sales offices nationwide, Prior to the appointment. Wilson was corporate program officer at Ascom Timeplex in Woodcliff, N.J., and before that he was corporate vice presi dent of information management at Scientific Atlanta

stiness Wire, a San Francisco-based electronic distributor of news and information, has announced the appointment of Steve Messick to the post of systems manager. Formerly an independent consultant, Messick will manage all of the company's computer and network oper-

mit Bank in Summit, N.J., has announced the promotion of Robert S. Soway to vice president of technology. Alaska Airlines in



Senttle bas onnounced the appoint ment of Robert M. Reeder as steff vice president of informa tion and communications services. He

will report to Raymond J. Vecci, chair man and chief executive officer. Reeder will be responsible for computer systenns, data processing applications, communications systems and the printing and distribution of internal publications ad manuals for the airline

Previously, Reeder was director of applications development, responsible for managing the design and development of internal data processing systems supporting the information processing needs of various departments. Prior to that. Reeder held a variety of data pro

pessing positions with Deere & Co. in Bitnois, including manager of customer services at John Deere Information Systems

TRW information Systems & Services in Orange Calif, has announced the anpointment of Ann M. Delligatta as vice president and gene al manager of TRW



Information Technology Services. She will be responsible for software systems development and programming quality assurance and in.

tegration testing, and telecommuni tions systems management. Prior to the appointment, Delligatta was vice presient of advanced technology projects at TRW. She has more than 20 years of experience in data center operations, extems and software development and IS management.

The Walter A. Hans School of H

at the University of California at Berk ley has announced the appointment of James A. Spitze as executive director of the school's per Center for Information Technology and Management Spitze currently serves as senior vice presiden and CIO at Tri Valley Growers, Califor nia's largest agricultural cooperative and as the managing partner of The Systerms Consulting Consortings, Inc., a regional information technology manage ment consulting firm. He has previously served as CIO at American President Lines and Xerox Data Systems.

United States Bronze Powders, Inc. in Flemington, N.J., has announced the appointment of Alex Williams as MIS director He succeeds Ed Fahnla

The Healthcare Information and Ma agement Systems Society (HIMSS) has announced the election of new off cers for 1995. Elected president was Bichard C. Howe, associate vice president of IS at the University of Cincinnati Medical Center Elected vice president was Richard Reypolds, director of man ngement engineering and regional services at the University of Wisconsin Hospital and Clinics in Madison. The current president and vice president, Nancy Aldrich and Charles Platt, will re nain in office until July 1.

In addition to the elections of Howe and Reynolds, four appointments to the HIMSS board of directors were apnonneed also effective July 1 They include (clinical systems) Cynthia D. Spurr, program manager, nursing sys-tems, at Brigham & Women's Hospital in Boston; (IS) Deborah L. Krau, CIO/vice president of information ser vices at Lahov Hoalth Care Network In Burlington, Mass; (management engi-necring) Cheryl A. Turner, director, de cision support, al Northeast Georgia Health Services in Cainsville, On; and

rose, Mess HIMSS also sone HIMSS also announced several mem-ber appointments. Keith A. Barnett formerly assistant director of IS at Deaconess Hospital in Evansville, Ind., has been appointed senior systems analyst at St. Mary's Medical Center, also in Evans-ville, Richard E. Cowan, formerly vice president of information services and CiO at St. John's Regional Medical Center in Joplin, Mo., has been appointed to

communications) Ronald S. Conrado, president of HOMISCO in Mel

the same position at Lakeland Regional Medical Center in Lakeland, Fla. Alfred M. Dees, formerly ClO at the University of Minnesota Hospital and Clinic in Minneapolis, has been appointed director of information services at University Hospital Consortium in Oak Brook, Ill. Robert L. Erndt Jr., formerly vice president of information resources at Mount Carmel Health in Columbus. Ohio, has been appointed ClO at Alexi ters Health Bystem in Elk Grove

# Calendar

#### MARCH S-11

The Slath Annual Expanded International Help Desk Conference, San Francisco, March 5-8 -Seven conference forums examine key issues. including planning, implementing and supporting a help deak or related support service. Contact: Help Desk Institute, Colorado Springs, Colo. (719) 531-5138.

The Workgroup Solutions Conference and Expo. ware, including improved electronic meeting facilitation techniques: maximizine return on investment; global collaboration, groupware for heterogeneous architectures; automating field personnel, developing workflow applications; integrating groupware with legacy systems; and administration and security issues. Contact: David Coleman, GroupWare '95, Sun Francisco, Calif. (415) 282-9192

Convex User Group Worldwide Conference, Delles, March 5-9 - Contact: Mary Kay Bavens. Convex Computer Corp., Richardson, Texase (214) 497-4584

Consectation '05, Neg Jose, Calif., March 6-17-An opportunity for wendors of networking software and systems to test the interoperability of their new products and internet protocols. Contact: Carolyn Haves, Haves Event Management, LaPorte Ind (219) 324-7313.

#### MARCH 12-18

15th Annual Use of Clinical Information Syst Conference, Snowbird, Utah, March 12-15 -Contact: Association for Applied Clinical Information Systems, Ann Arbor, Mich. (313) 971-

Uniforum '95, Dullas, Narch 12-16 - Keynote speakers Include Ed McCracken, chief executive officer, Silicon Graphics, Inc.; Robert Frankeeberg CEO, Novell. Inc.: and Bruce Toguszzini, engineer, SunSell, Inc Contact: The interface Group, Needham, Muss (617) 449-

ing the Information Resource: Information plogy and the New Yalan Equation, Lon Anopies, March 12-17 - Forum focuses on frameworks, techniques and skills recessary to align information technology with the needs of business, Contact Marcie Desmond, Cambridge Technology Partners, Cambridge, Mass. (617)

\* ogy. Valley Forge, Ps., March 13-16 — Contact: Rosenberg & Risinger, Culver City, Calif. (310)

ard an Electronic Patient Record '95, Orlanda, Fla., March 14-19 - Eleventh international and the specific of electronic health record systems and global conference on pagient cards. Keynote presentations include Cutting the Hype: Read Life Demonstrations of Today's Capabilities" and "Forus on the Patient Effects of Changing Technology on the Patient." Contact: Medical Records Institute. Newton Mass (617) 964-3923

# MARCH 19-25

ference, Orlando, Fla., March 19-22, - Postures 30 concurrent sessions divided tota flor customs rics: management, securities, products and services, technology and global custody Contact: Oh

American Renkers Association Washington

Life Office Management Association Systems Forum and Exhibit 1995, Orlando, Fla. March 19-

22 - Life insurance industry conference features more than 800 management and techs 'cal sessions in areas such as data security client! server and LANs. Contact: Guide International, Chicago, ID (312) 245-1509.

or Medd Baston March 19293 - Contact

(DG World Expo. Premineham, Mars. (50%) 829-

#### MARCH 26-APRIL 1

1995: Electronic Payments, Business Sc New Orleans, March 26-29 - Conference focus es on radical changes in the way institutions exchange information and payments. Contact: National Automated Cleuring House Association Herodon Vs. (705) 742-8190





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# Re-engineering the Workplace

# Reason: Many technology groups cling to old ways.

How much change is enough? Ironically, information systems remains one of re-engineering's biggest bugaboos.

IWS

# By Joseph Maglitta

ric Christensen didn't start out to re-engineer information systems at Ameritech Corp's 2,500-person technology unit. "It was more a 52-card pickup of the whole husiness," says Christensen, director o consulting at the Chicagobased telecommunications giant. One IS change usit led to another

But Joseph Cleveland did start out to totally revamp IS at Martin Marietta Corp. in Bethesda, Md., following the company's April 1998 merger with General Electric Aerospace. In 18 months as vice president and general manager of internal IS, Cleveland trimmed and transformed the company's 1,500-person operation.

Each took a different path, but today, both belong to the same minority: Top executives who have tackled widespread husiness process re-engineering of technology operations.

Huh? Isn't technology one of husiness process re-engineering's pillars? Wasn't IS supposed to help drive wide-

What's the toughest part of re-engineering?

54% Gettree measurements or state 53% Gettree measurements in state 53% Gettree measurements or state 54% Gettree measurements of the declaration of the decla

scale, radical corporate redesign?
In their 1983 best-seller, Re-engineering the Corporation, Michael Hammer and James
Champy even declare: "A company that cannot change the way it thinks about information technology cannot re-engineer."

Yet several years into The Great Re-engineering Rush, many corporate technology groups remain unwilling, nnable — and more of-

ten than many care to admit — uninvited participants in radical reinvention. And in fewer areas has the zeal to rethink and raze daily husiness been more tepid than in IS's own backyard.

Despite the wave of reorganization now taking place in thousands of technology groups across the country, truly radical change in how technology and services are delivered is still rare.

"IS organizations are working very hard to rearchitect their role," notes Mark Hess, vice president of information technology management research at Gartner Group, Inc. in Stamford, Conn. "When I ask a couple of thousand

eople at a conference session ow many have recommized in the past year, 90% raise their hands." Yet Hess and others say many

such efforts to date have merely redrawn organizational lines without rethinking mission, values, staffing, culture, business practices or processes.

Jeanne Ross, a research associste at MIT's Center for Information Systems Research in Comhelden Many nemons that change

Ross and colleagues from the University of Minnesota and Southern Methodist University have just finished a study of IS changes at 50 leading U.S. organizations. One conclusion? "People are reinventing rather than re-engineering," Ross says.

Limited rethinking Other recent studies and inter-

views with industry observers and IS leaders point a similar nicture. White object/somer and object technologies have sparked new ways of developing software, few medium-size and large U.S. corporations have engaged in widerlooking, radical, fundamental re-

Consider a major survey cooducted last summer

by CSC Index, Inc. Cambridge consultance asked 497 large North American companies which processes dee or order fulfillest, were targeted for money opering Only 6% of respon-

dents said they were reworking IS. (in Europe, the figure was 4%.) A smaller study by Business Research Group in Newion, Mass., placed the number at 35% (see chart at right). Some. bowever, say that figure seems

True, many IS groups have adopted elements of business process re-engineering - notably cross-functional teams and per reviews. Many have also begun using rapid prototyping, joint application development and other new software development techniques to support corporate re-engine ing And analysts say it's likely that more group have taken the plunge since the studies were conducted

But there's poopes tion that companies such as Ameritech and Martin Marietta

which have completely reworked IS practices and structures to cut waste, delivery time and cost and to reduce defects while focusing on the corporation's customer - remain relatively rare. Most action so far backeon by 18 leaders such as Bell Atlantic Corp., Actna Life and Convolty Co. Owens-Corning and

Merrill Lynch & Co. "Many ClOs are still reactive and waiting," says William Stod dard director of Anderson Con suiting's re-engineering practice in Chicago, "Too many are kind of sitting back and driving the bus

from the backseat." Some observers worry. They say elinging to traditional practices and structures could mean big trouble for IS groups and their cor-

Either way, it's low What percent of re-end CSC Index survey of 497

> porations. "You can't change just one piece and have any affect." Hess save The CSC index survey, the mos

comprehensive study of re-enrineering to date, found that technology rollout is already seen as the toughest part of business process re-engineering (see chart page 961

As second-wave re-enprojects roar ahead, technology introduction threatens to further restrain the pace of business change If that occurs. IS could bee on even weaker link that attfles innovation and, ultimately,

kills corporate re-engineering ef-

Hammer, president of Hamme and Co. a Cambridge Mass. consultancy, warms that 18 groups must create the right environment for change by assembling network, electronic mail, shared databases and other enabling tech nology. If not, he says they'll be replaced by oursourcers or consul-

listo business units or fired even more frequently than they are "If 18 lsn't going to be in the re-engineer-

lar business. It's not going to be in any business." Hammer declares. While that may sound like consultant

agreration, Cleveland says, "It's a matter of survival.

What's the problem? IS folks seem perfect for business process re-en gineering. In theory, their sys-tems-oriented analytical skills would be a boon for any re-end neering team or planning effort. Business process re-engineer

ng, in turn, could be a boon for IS Research by Ernst & Young found that redesigning processes, skills and infrastructures can produce a fivefold or tenfold boost in IS per

formance. And re-engineering in our own backyard, as Ernst & Young consultant Vaugha Merlyn has often point can be mod practice for larger roles in corporate re-engineering efforts. Yet numerous obstacles con-

spire against would-be re-engi-Many groups remain too mired in application development, maintenance and legacy applications to

do much else. Even those who outsource may be wrapped up in supporting other re-engageering proj-Charles L. Feyr, who heads Deloitte & Touche's financial ser vices ladastry re-engineering

practice, asks, "How do you deal with other patients while you're operating on yourself? It's exmely difficult to do. As a result, many are simply too hyperbole it's not too great an exbusy and stretched too thin to think pariously about payamains analysis/design, consultation, infrastructure architecture techni-

cal support, disaster recovery training and other functions. "IS groups are the shoemsker's kids," Steddard says. Christensen concurs, saying, "It's a matter of being so focused on solving other eople's problems that you don't have time to look at your own. But few technology groups seem

eager to remake themselves. "IS kind of prides Itself on being a change agent for others." Re-engineering, page 96

Customers are much more

willing to hear our story about doing business process re-engi neering for them if we do it for our-

selves" Joseph Clevelar Martin Marin

## Re-engineering

CONTINUED FROM PAGE OF

serves Raymond Caron, chief information officer of Cigna Corp. in Philadelphia. "But it's a hard organization in and of itself to

Caron, a pioneer who began re-engineer ing IS at Cigna in 1988, also notes that not every CIO can stemach business process re-engineering. "You're really opening to self-examination," he says, "It's not al-

ways pleasant. Hardly. Technologists aren't immune to layoff fears, sabotage and "program-of-

the-mouth" cynicism that universally greet "People just stab you in the back," complains one technology director

who recently tried to re-engineer his firm's systems development process while shifting to client/ erver. Staffers balked. "There's a tremendous push back from MIS," the manager laments. They know that if this works you won't need 37 development peo-



ting IS professionals and managers on board can be tough. Says Cleveland: "You have to work doobly hard on picking the right leadership and making sure that leaders walk the talk."

"It's a never-cuding battle," Christensen use it's difficult and lengthy, inter

nal IS re-engineering requires prolonged top-level support, says John Wyatt, president and chief executive officer of James

Martin and Co., a re-engineering consul-Inner Interest can be tough to maintain, he says. "The lorical end to the hor-

ror story is outsourcing." Lack of vision is often a problem. too. University of Colorado professor Daniel J. Couger says re-engineering in IS is often doomed by a

lack of creativity. Technologists, be says, "have lots of tools that talk about how you analyze a process. But they only advocate one tool for redesigning a process - brainstorming. the least effective of all the cre-

ative toois. Course author of Creative Problem Solving and Opportunity Finding, published by Boyd and Fraser, says in the long run. money spent on expensive committants would be better spent on teaching IS

staffers creative tools and techniques. And sometimes it just makes more sensu to leave things alone. Take Motorois, inc.'s Transmission Products Division in Mans-

in mid-1994, division lenders wanted to speed up the 100 developers who create embedded software for the company's V.34 and 3500 modems. They swapped a decadeold VAX for a Hewlett-Packard Co. HP 9000 and Sun Microsystems, Inc. servers running HP's Softbench but decided to stop change there. "We did make a conscient decision not to organize around process," save led Johnson disco-

tor of software engineering. "We felt that focusing on process would take people's even off what they were really meant to be doing, which is getting products out the deer and meeting marketing de-

And not every company needs to re-engineer 18 That's especially true of lean firms that depend heavily on outsourcing When we do a develop ment project, we don't

have to fight the wright and atructure of the information technology department," says Kevin odsex vice president of IS at Kirby Corp. The \$400 million marine transportation firm in Houston employs just nine IS staffers. When projects arise, "we inst prepare a frequest for

proposale) and centret the consulting Flexibility isn't chean however Kirbs iust finished a \$1.2 million client/server development project with Houston consultaney BSG. But Godsey says he thinks it's worth it. "We have no huge infrastructure to maintain. And we have the flexibility to team the resources to the project at hand "

Shifting focus In fairness, not all blame ties with IS. Ann-

lysts note that most companies begin reengineering where it makes the most economic sense. Until now that usually mount

Toughest technology problems

key customer-contact areas, notably production, service and order processing, in

many cases, IS has simply not been a high That may be changing, however, "Re-engineering IS" has started showing up on IS. conference programs. Last fati's Society

for information Management (SIM) nation at meeting featured several sessions that addressed the topic Gartner Group's annual symposium last fall also delved decoly into the issue, and ditto for the upcoming CIO Personactivos conference next month



Talk of "Centers of Excellence," a related "It's a matter notion, buzzed around the informati Management Parum conference in Sen Diego last month.

Moreover, a new SIM-aponsored study by the University of Minnesota's Managemen Information Research Center shows signs of serious stirring. Some 200 CIOs were asked to list the Top

10 most critical issues for the next three to five years. The top cholors were "building a responsive information technology infra structure" and "facilitating and managing husiness process re-engineer As at Ameritech, corporate directly

may be the catalyst, in April, The NatraSweet Co. in Deerfield, Ill., plans to begin a "pretty significant ramping up" of an information technology redesign program, says information technology di rector Pat Moroney. The move will be part of a corporatewide re-en-sineering initiative by parent MonenntoCo borner

Spotlight on proc

Other companies taking such naths may see their future in Ameritech and Martin Marietta. Both firms organized around key processes, such as providing infrastructure, resolving systems problems and managing systems s, instead of around depart pistforms or functions

Martin Marietta's virtual organization revolves around four centers of excellence: business systems applications, design and architecture, computing environment and services and process change management. Corporate design and architecture are centrally managed, and quarterly and anousi process reviews trou

lems and devise new ideas. Ameritech also created a 15-member "process innovation team" to drive further of being so focused on solving other people's problems that vou don't have time to look at your own."

#### Re-engineering the Workplace

ent. Both of the companies stress individual empowerment, crossfunctional teams and simplified job de-

While painful, companies say radical re-engineering in IS can yield dramatic payoffs: in less than a year, Martin Marietta sava it has slashed IS costs by \$70 million and trimmed its head count by 900. Technology transfer and credibility have improved too, according to Cleve-

We can now perpetuate the best info mation technology practices and best on business practices across the corporation's 24 breiness units much faster than ever before." Cleveland says. Plus, "eastomers are much more willing to bear our story about doing business process re-engineering for them if we do

And IS staffers like the broader career opportunities, he adds.

#### Sold on re-engineering

Ameritech says it's too soon to mee all benefits. One early sain: A reduction in the time needed to set up a technology infrastructure for a new user shrank from one or two weeks to three days.

Ciona homewer is sold The insurer

process-based

It takes guts to build the perfect line printer.

gineering elsewhere in the corporation may well prove true in IS: Namely piece-

by niego redesion is better than no rede-

"People think radically." Ross says.

"There's a danger to the Nike mental-

ity of that do it." says Frank Gens, vice

president of international Data Corp. in

Framingham, Mass. A self-described re-

engineering skeptic. Gens says in some

but they're only able to function in in-

cremental changes."

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claims early efforts at its Cigna RE unit among other gains, alashed IS operating costs 40%, killed a yearlong applications backlog, lowered error rates and trimmed the number of job descriptions

Caron says the 3,000-member IS group ian't through yet. It is now entering a third phase doing widespread process redesign in data centers, services main enance, operations and application de-

from 27 to a bap-tful

Even if you're not ready for massive change, take beart. What's true for re-encases, carefully chosen prospects can be nearly as effective as widespread radical

in fact, not every IS department starts off consciously deciding to re-engineer Instead, many say they layer impro eat upon improvement — whether that's closer to total quality management

"There's a continuum of change," Gens says. "Say you consolidate half a men belo lines into one 800-number or

split the development group into new development and maintenance -- these in cremental things can be every bit as important as 're-engineering'

Ultimately, Hess predicts, technology rouge will adopt as much busing cess re-engineering as they need. "IS people may be slow, but they are not stu pid."he says.

Maglitta la Computeropriel'a senior editor en porate strategies.



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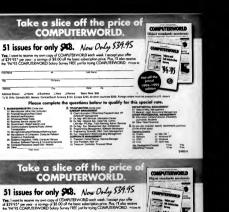
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# In Depth

# Warehouse



Bying to clean up logacy systems is "like boding the ocean," says Jack Sweeney, director of information management resources at Bank of Beston and insufficient

uilding seemed ing user

uilding a Unix-based data warehouse seemed like the perfect solution for supplying users' insatiable data demands at Florida Power Corp. in St. Fetersburg, a utility that supplies electricity to about 1 million

Perfect, at least, until reliability problems, exceedingly slow extract times and user demands for real-time data began taking their toll. "We were planning to take DB2 tables and extract them to an Oracle (database) on a Unix server," says Mitch Hull, manager of information systems at Florida Power. "We have since moved that back to the mainframe

As more IS organizations incorporate the data warehouse concept into their client/ server enterprise strategies, such problems are not uncommon. Dirty data, immature tools and communication infrastructures that cannot keep up with the demand are all-warehouse were more first warehouse were more first.

### Warehouse woes

CONTINUED PROM PAGE 100

too-frequent hurdles that manus-

As Sally King, manager of data access services for US West New Vector Group in Bellevue, Wash., puts it: "One of my teammates has said, You can't buy a data warehouse - you have to build it." And, like most construction projects. building a data warehouse requires hard work and a willingness to get your hands

Distr date For Jack Sweepey, director of inform tion management resources at Bank of Boston Corp., one of the biggrest pr less in setting up a data warehouse h been "gretting the data to be consistent.

ensy is drawing from legacy syste ranging from Computer Associator I ternational. Inc.'s CA-IDMS to VSAM the example in one system the fi

containing the customer number may be designated one way while a second application using that same ours applies a different descriptor to it, he Although the hy-the-book solut would be to modify the operational m

tems for greater consistency, trying to clean up legacy systems is 'like builting the ocean," Sweeney says, Instead, be ates the inconsistencies as data for transferred to the data warehouse This work is just one of the steps in weeper's information architecture for

the data warehouse, but it is an important one he says. "Yoo've got to be a hard-beaded evangelist in making sure the data is right." For King, scrubbing the data has not

een much of a problem. "Our husiness is relatively young," she says, so the comnany's lemey systems don't "burbor the nightmares that a banking system might Other IS departments have simply

washed their hands of the problem We made the decision that we would not seruh the data," says Rob Collins, dato architect at Westinghouse Savannah River in Aiken, S.C. "We can transform the data we can normalize the attributes, but the contents - that's not our responsibility."

A course in remodeling For most of these users, the corperstone of the data warehouse is the data architesture and IS chiefs are stranging with the necessity of remodeling the data for its intended new trees.

King points out that when an oncestions system is developed it is designed to facilitate transaction processing. But in a decision support environment "that

type of data structure makes it hard on the user and hard on the system." she Thus while King's operational systems reside on a fully permalized Oracle

detabase, the Oracle warehouse datahave is "denormalized" she says. This makes it easier for and owers to find and apply the data they need while reducing the demands on the database to perform ioins and other operations to provide the ouested information. Sweeney's approach was also to con-

e groupe, I wa

Dayte ware, house A data warehouse is a database that provides users with data. extracted from production and on-line transaction processing systems, that supports business analysis activities. At the same time, the warehouse protects the integrity and performance of the organization's production systems. By establishing a data warehouse, IS managers can provide users with the data they

structure that was generic," he

want while preserving their legacy systems.

In Sweeney's data warehouse, the nerectory that determines who the user

is and whether he is permitted access to that data. From that point, the system forwards the overy to retrieval services. where a enterny translates it for the D62 warehouse database

The extract is then sent back either diectly to the desktop or passed off to a The architecture has a lot of moving

Colline save the design of his date warehouse began with the definition of the necessary metadata. One of the rules of erenting a data warehouse, he says, "is that it has to be supported by a good. logical model." This model includes representative attributes, business definitions and names for the contents of the

norte "Sweeney says

Collins is populating his date warehouse with financial, personnel and organization data. "We will not let ourres be corrupted by previous proce dures, and we will build a data dictionary" he says. A data dictionary he explains, is critical for letting the end uses know what the structure and contents of

rtually not warehouse management ol is quite up to speed. We found a lot noles in the products" - Jack Sweeney

the warehouse are.

Groot McFinddon, waterboose project manager at Detroit Edison Co., says the first thing be did in beginning construction of his data warehouse was "met a handle on what the architecture would be."

McFodden is taking advantage of the engoing reconstruction of legacy applications that Detroit Edison has undertaken

McForldon acknowledges that the warehouse applications are not in production be in in the midst of developing collection, outage and billing and revo tem that enables Detroit Edison's nurasing department to monitor the

"We want our [database analysts] apport this environment," he as which means making were they are cle

which means making ours they are clear on the concept. McFadden had to ham

mer home that the objective of the ware

house is out simply to preserve date

but also to make data retrieval as sim-

ple and efficient as possible for users

Database analysts tend to look at the

warehouse data the first time and say. 'Hey, this is not normalized,' "McFadden

nue case analysis systems. His analysis are also building a contract services ave

is tackling such questions as which project - legacy re-engineering or ware bouse construction - has priority. whother the data should be distributed or remain controlled and why staffers mend to mentionnets

"We've had some fights," McFudden save but exectually be was successful to convincing the application development groups in the organization of the impor-tance of being "data stewards"

is the network ready? McPadden says that one of the key eleneuts in transforming his data warehouse from a pilot project to production

is covering the infrastructure to support in the starters he needs increased not-& enpacity. adwidth is something that is critial here," McFadden says. For example,

one application requires transferring 200 bytes of data across his TCP/IP netto the warehouse others are equal-A lot of these jobs are four to five

Itransferliobs." McPadden says. Transfers the situation, be has begun ipe subsets of the data that end users actually require for their applicaon and then transfer over only the data 4 the applications pred. His group is the midst of "finding out what informa-

sees need "he says second method of overcoming a lack admidth is to "chane question ad share reports so we doo't have

r cranking aminet that database dePaddeo explains. "I want to facilitate King is working to ensure that there exists sufficient network capacity to-

handle the load We do recognize the potential impact of adding the data warebouse," she says, Right now, we have about 100 users that are able to get in," which keeps concur-

As part of the combined warehou rent use limited to about 20 users learney development project. McFludden King says she expects within the ourt

Trouble spots

Remodeling. Data warehouse construction involves remodeling data for use in a relational database system or, at best, for translation from one relational database

to another, Management. Management of warehouse data is a concern. particularly if the warehouse is spread across multiple servers, as is often the case. Tools that are still largely

unproven in a production environment and still have wide gaps in functionality add to the complexity of the Communications infrastructure. The communications

infrastructure has to be up to the task of relaying a dramatically increased load of queries and responses, especially if much of the processing will be performed locally

#### In Depth: Warehouse Woes

two years to have to support 100 or more concurrent nears which would stretch the current network's capacity. King in conjunction with the compa-

ny's network management staff, is now monitoring usage and bandwidth rates to establish baseline performance num

With that information, the two groups can scale up the use of the data ware-

bosso in such a way that usage keeps in line with network capacity.

#### The tools don't cut it But even if you get the infrastructure

right, sometimes the available tools from database engines to data extract

and management tools to end user query tools - can trip you up. For example, "a lot of PC-based tools per out based on the limitations of the desktop," namely, memory and design,

McFhdden savs Sweeney says he expects some problems with software. 'We are doing things that some of these database management systems were not designed to do." he says, such as rapid loading

and refreshing of the warehouse data-Sweeney's IS group started with SQL Server as the warehouse database but ran into trouble when refreshing SOL Server from the DB2 database. "We had to go through and rebuild indexes every

time becase the schema was so differ ent " be explains. He is now looking at other database products, including Sybase, DB2 and Or-

"Virtually no [warehouse management] tool is quite up to speed." Sweeney adds. "We found a lot of holes in the prod-

One problem is that tools work well only with one or two platforms. For example, while one extract tool may work well with CAJDMS or IRM's DAS, the esmatool cannot be used effectively with VSAM

ucts."

For many users, the immediate sol tion to to make their own tools. McFadden, for example, performs his extracts with Cobol routines developed in-house,

as does Hull King however, has an advantage in that she is simply taking data out of one instance of Oracle and placing it in another. She has been using Oracle's snapshot facility, which she says is meeting her database replication needs Despite the shortcomings in current tools. Sweeney says functions such as extracts "are not a problem" for his com pany. He is using Prism as an extraction tool combined with "a lot of Cobol and [Statistical Analysis Software] code to comploment it

#### It's all on to users

in the end. Hull says, IS must deal with all the problems and obstacles to building a data warehouse as long as mers continue to clampe for information to

help them do thair jobs.

Many IS chiefs, seem to be up to the challenge. A poll of the conference at-

tendees conducted by Meta Group, Inc. a Westport, Conn., consultancy, showed that internet in data warehouses inmed from 5% of attendees in February 1963 to 90% a venriater

For its part, Florida Power has production customer files that include more than 300 tables and more than 30 million rows for about 60G bytes of information.

From this data, Hull extracts some 75 tables with 3 million to 4 million rows each, or about 20G bytes of data. About 100 users are employing Microsoft Corn's Access to analyze warehouse

date "If users say they need real-time data. you accept that," Hull says, "It's IS's responsibility to provide it for them."

Jenkins is a feedance technology writer in Axsonie Conn

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# **Computer Careers**

## WHEN WORK EXPERIENCE MATTERS

#### BY JULIE HART

When is experience important? When you need to get going quickly, you definitely need someone with experi-

open" - los Hunter When the systems at the previous job and the new job are identical. Theo you can bit the ground running and start making the organization money."

"Some very technical jobs such as senior-level analysis and programmers [require] experience. They've already been through the tropches and long i rive you the best bang for your buck."

- James LoSanso The systems we work on are extre ly complex, and we don't have time to train programmers. Even at the comput or operator level, we hire I fairly sensoned people) to maintain our Unix and mainframe systems. We can't afford to hire inexperienced people because techpology" moves too fest - Kim Whitney

#### When would you hire an inexpe

"I might hire an inexperienced person if some of their skills crossed over.... If I needed someone to set up a help desk. I'd prefer someone who'd done that before. But if I couldn't find that person. I much consider someone who had done a lot of user-requirements defining on a project team. At least they [would] have the occessary client skills." - John Wise

that you need both learning and experience. But with the body of knowledge changing so rapidly, you can't always find experience. In that case, I might

choose someone young and inexpertenced as long as they have the knowl-· Cunamion We hire inexperienced people as PC technicians. We also hire some program.

mers right out of school. We make sare that every entry-level person has a meotor, It's the only way we can bring them" ap to speed. -LoSasso

What experience do people tend to exaggerate about on resumes? The impact of their work. Someone may have implemented a Novell network in multiple locations affecting 300 people What they say is that the network supnorts handreds of people - that could be intermeded as 100 or 900. They say their Bone Latefullars. What they don't mention

is that they only played a small part I don't think people fib much about their education and certifi

cation "-- Wise Their ability and knowledge of tools and produnte Heomeone comes in and says

"Lean't think of any job. My formula is they know Microsoft Word Letter Jandson on), chaptes are they've used it once. In reality, they can barely get through building a spreadsheet. If they've walked by something and to sched it, they figure they have experience." - LoSasso

Their hands on concrience with particular technologies. Their interpretatoo of experience may be different from yours. For instance, maybe the extent of their spreadsheet experience is using Excelonce. They re not readly lying. they're just a different level of user than

what you're looking lot" - Hunter How involved they were on a particular project. Unless len to their previous manager to check, there's oo way to know if what they say is true."

What skills are best learne the lob? Problem-solving and analysis skills We're not dealing with a homogeneous

OUR RESPONDENTS:

- Whitney

lems are coming from in a mixed environment."- Wiee "You can't him someone and expec-

them to understand the company and bow it operates fright away! Even if you hire someone who has worked in your industry before, they can still brings breath of fresh air to your organization as they learn about your company and its politics "\_ Hunter "In the consulting business, that's a

lough apostion. We can't hire consultants and expect them to learn on the job. With the high cost of hilling, we can't exnect clients to pay for a learning curve." \_ John R Nuban

"If a company has a standard way of nplementing systems, that's best learned on the job. [For instance], how a company wants to document design or document analysis. That's different ev

eroshere you to "- Whitney Hart to a freelance writer in Sonnyvale, Calif

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Figure Opportunity

# Hiring picture

TV sales may be up in the consu electronics business, but companies are keeping IS departments lean.

onsumer confidence has returned, and electronics manufacturers are resping the rewards. But while the industry has come back into sharp focus, the hiring picture for information systems professionals is still unclear. Driven by record sales of color televi-

sions, the consumer electronics industry evnerated \$56 hillion in sales just year. according to estimates from the Firetropics Industries Association, an Arlington. Vs., trade and lobbying group. This figure could reach \$60 hillion this

year, a projected increase of 9% Sales may be strong, but the industry is driven by fierce pricing competition. Manufacturers struggle to add new features at a lower cost each year. To this end, a massive migration to client/server architectures is under way, as are un-

merous business re-engineering efforts. The pressure to operate as efficiently as possible is palpable, and IS hiring projections are typically single-digit figures. "Consumer electronics is very competitive, and IS is always under pressure to stay lean," says Bill Lucy, manager of husiness applications at Mitsubishi Consumer Electronics of America, Inc. in Santa Ana, Calif., a maker of TVs and VCRs. He says be plans to hire four or five people this year for manufacturing and sales applications and has requested

twice that many in 1996's hudget Thomson Consumer Electronics in Indianapolis is recruiting IS staffers on a departmental basis, says Shea Kelly. manager of homan resources for manketing and sales who will seek to fill four or five technical positions this year. The hir push at Thomson, which owns the RCA brand name, is to recruit engineers

and individuals with MBAs and IS backgrounds into product development and management positions We look for finformation technology professionals outside the traditional [information technology] roles with greater interest than we did in the past,"

Kelly says, adding that technical-related inh appartunities beyond the confines of IS will increase as interactive TV de-At TV and cable set-top box manufacturer Zenith Electronics Corp. in Glenview III , sales for the first nine months of 1994 street 17% court unless for the caree. period in 1983. Hiring plans are some-

what more ambitious but still mode We generally don't have a lot of fine tuation in hiring but we'll have a blip in 95 with a lot of new systems going in." save Jim Namuel director of corporate computing. "We're seeing demand for new systems to support re-engineered

husinesa nevesses Novosel says he anticipates hiring contract programmers to meet part of the demand as well as filling several perma pent positions and retraining staff

members in rijent/server technologies. For new positions, he peeks experienced IS staffer only "We're not hiring entry.

## level people," be says.

neering effort

While the IS hiring outlook at Zenith, Thomson and Mitsubishi it modest to strong, it's difficult to say whether that is the industry trend. Many executives in the consumer electronics industry are touth to discuss any subject the competition might find revealing. A Sony Elecnies Corp. s pokesman notes, however, that the company will try to maintain staff levels this year in accordance with the costs of a business process re-engi-

New IS hires should possess client/ server experience coupled with vertical applications experience in manufacturing, sales and marketing, research and development and product managemen A solid AS/400 background is also a fool in the door, the IBM midrange platform figures prominently in manufacturing and customer service and sales applications. Job seekers with relational databeer skills and a knowledge of Unix platforms are also in demand

Goff is a freelance scriter in New York.

#### Crossing over

Although IS hinng plans are somewhat hazy, new opportunities will evolve in the

Two factors are creating a new enment market the emergence of technol-ones such as high-definition TV and mult idia, and the convergence of computer

boundaries to include publishers, on-line service providers and other segments loa

ing to hop on the interactivity bandwagor notes Ken Christie, marketing director at (IMA) in Annapolis, Mc Specifically, comp

Specifically, companies need programmes and analysts aspenanced in C, C++, Microsoft Corp. 's Yeard Basic and Microsoft Access to develop interactive multimada games and other CD-ROM West, says Roon Rogers, meeting director at Mutterson Basical Microsoft Basical M

media Recruiters USA in Delias. User interface design experience will be not as TV manufacturers move into the set too bonserors. The cable box that sets on

mentace, for such applications as vic The direction the industry is tak ward interactive TV blurs tha lines between a computer interface and a TV interface."

nder at Thomson Consumer Electron opie who understand both have the

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# **Marketplace**

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ASSISTANTS

it's no secret that personal digital assistants (PDA) have in many respects failed to live up to the hype that accompanied

their introduction. That's not in say an one is buying the diminutive devices. Forrester Research Inc. in Cambridge, Mass., expects PDA sales to top 370,000 upits this year How ever, the high price of PDAs has stymied their entrance into the consumer marpering yendors' mush into vertical applientions As a result PDA cales are being rezed into a relatively narrow man ket niche - carly technology adopters

PDAs "are very powerful but outcexpensive," says Janet Cohen, an annivel tre Calif is rolling out hardware and at Forrester Research "And the wireless infrastructure isn't in place yet for the broad consumer market - and won't be ontil the turn of the century."

the current crop of PDAs has some key advantages over laptops and pen-based systems. The low weight of PDAs provides exceptional portability, while the nunications orientation of many of the devices makes it easy for users to check electronic mail back at the office. This puts PBA yendors seeking broad or markets in a coandary however "For

the woodney to stay alive fund (research and development) and drive the price

point down, they must go to the vertical markets. That's where the dollars are

right now "Cohen says So information contemp managers can expect PDA vendors to come knocking this year with entiring proposals for handling vertical applications, Some users

are indeed implementing successful projects based on 'very vertical informa tion-gathering' needs, according to Tim Submidt an anabet at Intelligent Tech. nologies International, Inc. in Orlando.

Still, some users who have already evaluated PDAs for these beavy-duty computing tasks advise caption For example, F. D. Titus & Son, Inc., a. medical supply company in City of Indus-

software to support its 180 mobile sales representatives. A lightweight, wireless PDA sounds like an ideal solution but the computing requirements are beyond the scope of current PDAs, says Tige Titus. vice president of development. Our application includes order entry

and order management for field sales rens who carry 14,000 products." Titus says. A sales representative on a call needs to sort through the product data base quickly and calculate prices and ions. Titus examined several PDAs but found they lack the raw power needed for such assignments. The company settled on ISM penbased tablets with full-fledged 486 pro-

cessors. 8M bytes of memory and 170Mbate band drives

IS managers at the Chicago Board of Trade can into some other limitations They examined a wide spectrum of bandbeld devices to anchor a federally manted electronic trading system.

Project director Phillip Scholtz says the Board of Trade held a hidders conference to describe its needs to potential PDA suppliers. About 200 vendors attended violding 50 hide renging from standard PDAs to touch-screen units These applicants faced the challenge of providing floor traders with a very light computing device - less than I pound with split-second, secure wireless communiculians to the control trading sys

logged 100 trades in five minutes. We need speed almost like a 386; the commercially avail able PDAs just don't meet those

stringent require ments." Pubalta. says. The board ultimately settled custom-made units designed by

Synerdyne Corp and manufactured by Seiko. Altogesher, deployment of the first

many applications.

100 units has cost approximately \$11 mil-"Many propie seem very frustrated be use they are trying to match their ap-

plications to the boxes available. Instead, they should be saving. Here are my requirements" and let vendors match their products, Scholtz says. PDAs may fill the bill in several vertical applications, including health care, field sales and service and transportation applications, Coben says, However, PDA vendors must after a high degree of customiration to truly meet the meeds of

Sister is a freelance writer in Ashland, Mass

#### WHAT PRICE PDAS?

Average price of PDAs

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#### Feb. 3 Stock Ticker



#### Wang's picture brightens

Wang Laboratories, Inc. (WANG), having emerged bankruptey with a plan to focus on the workflow and i ing market, is again generating profits, if not interest. "A small section of the investing public is all that is pr attention right now," said Greg Curham, an analyst at V

Welty & Co. in San Francisco. "The stock has good ahead of it though Curham said the Lowell, Mass., company is gener. lots of each flow, as evidenced by a sixth consecutive p

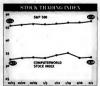
able quarter. And last week Wang completed its purcha Groupe Bull's workflow, imaging, repair maiotenance U.S. government systems integration businesses.

However, David Benhaim, vice president at First Al Corp. in New York, says the workflow and imaging tee ogy gained from Bull won't help Wang make many inr arninst competitors PlleNet Corp. (FILE) and HM. "No one is looking ot [the Bull purchase] as an exc

workflow/imaging story, [so] it'll be quite some time b it can make a significant contribution" to Wang's or business, he said. FileNet retains the lead in the marke Even so, Carbam said the purchase will provide !

with the opportunity for numerous cost savings. He say stock is undervalued hovering around \$13 recently a from a high of \$21% after an imital burst of investor es siasm when Wang exited bank runter:

"investor expectations were a little ahead of reality." ham said. "It will take a couple of years of Wang po these types of results" for the stock to see significant ngain - Tim Ouellette



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### New switch hits

CONTINUED FROM COVER 1

technology alliance with Porc Systems, Inc. The ATM offerings will also ship in the first quarter. the obtence said

Eric Hindin, n consultant at Strategic Networks Consulting, inc. in Rockland, Mass. anid no holds berred competition in the high-speed switched networking arena puts pressure un enveryone to deliver

"It's a four-way horse race right now. And this is exactly what Cabletron must do if it hones to play in the hillion deline club with Rev. Cisco and 3Com," Hindin said, "If Cahletron fails tourtiewate a long-term vision and deliver on initial Synthesis products, it runs the risk of

beingleft behind Hindin did applied the fact that Cabletron is making the necessary moves to do some ATM development in-house and not rely solely on Fore Systems, Inc. in Pittsburgh.

#### Good performance, reliability

Arem Still, an early beta user and n co eations technicism at Thomson Financial Services, Inc. in Boston, gave the ESX-1320 high marks for performance and reliability on the company's 2,000-user network. Thomson Flnancial has the ESX,1320 beta model on its production notwork whose it has been running

finwingsly for the past week. Still east "It's unusual for us to put beto devices on a production network. But the ESX-1320 bas been doing exactly what it's supposed to do: to buys us n lot more speed, and it is extremely easy to install and manage. We've had no problems."Stilt said.

Another Cultetron user, Rick Graham, director of systems integration and planning at The Lahey Clinic in Burlington, Mass., said al though he has not yet tested or seen the ESX-1320, it could be a good fit for the hospital. The Labey Clinic is now the third juriest

group practice in the U.S. since its recent more. or with the Durtmouth Stichoody Clinic in Lobanon, N.H. The combined bealth care network now includes 12 separate locations. Deploying the stand-alone ESX-1326 would be technically and financially more feasible than continued use of large modular Cabletron hubs at satellite offices Graham evolained

"A 13-port stand-alone Ethernet switch would be apprepriate for us to use in smaller sites that don't need the large modular MMAC hubs. We're currently deploying MMAC hubs at smaller offices and that's not the most efficient solution," Graham said.

Some users and analysis, however, were more critical of the Synthesis rollout Cobletron is a major player, but it faces a

major challenge in cusuring the loyalty of its installed base will be there over the next two years," said Churlie Robbins, a vice president at Aberdeen Group in Bos-

ton. 'Tm really concerned that this massive plan for the next two years will leave their base open to attack That was the case

with former Cables tron site Wisconsin Power & Light Co. in Madison, which recently switched its alle-

giance to Bay Networks. "We have to marry router technology to ATM switches, and obviously [Bay Networks] is in evod position to do that " said telecommunications engineer Steen Others are more national

We believe Cabletron switching will be true switching when it comes out, so we're williag to walt," said Pet Boyd, a network engineer at MMAC-Plus beta sile Duke University in Durham, N.C. Boyd was referring to Cabletron's much-anticipated third-quarter release of its Secure Fast Packet Switching (SFPS) technol-

ogy for its MMAC-Plus enterprise hub When SFPS ships, it will include Ethernot. Token Ring, Fiber Distributed Data Interface (FDDI) and ATM SFPS modules for the MMAC-Plus. These will provide switching performance in excess of 5.6 million nacket/see, and an aggregate bandwidth of 9G hit/sec., product manager Dave Cutteret said.

SEPS will enable MMAC-Plus modules to accept variable-size LAN packets and translate them into fixed-length cells for switching across the MMAC-Plus backplane. This will make the MMAC-Pinsn true switching hub.

Kodak snaps CONTINUED FROM COVER 1

information systems director for the division. Under the mobile scheme cross

will have on the road access to a single data warehouse containing continuously refreshed informs tion - including data about castomer preferences. Users can replieste the warehouse on their portables via a newly developed

"What this will do is allow the sales force to operate in total disconnect mode." Neitsche said. Portable computers are not en

tirely new to Kodak's salespeople About (20 of the division's 350 reps already have Apple Computer, Inc. PowerBooks. Nonethefess, "the bulk of people have been using a desktop, and most of them work from their home" to dial up for data, seed John Althery, a regi rager and vice president in Kodak's San Francisco sales off

Kudek bones to change this at-

home quest for data by employing Lotus Development Cnrp.'s Notes programme as a front end to its resu temer information database. Uader the Notes application, uses will no longer need to dial in each time they need to review customer or technical information Pathor they will dial in once and replicate undated information on their PoserBooks, which will come with a 500M-byte bard disk for storage It is the replication abilities of

Notes that we are driving for, Neitsche said. "We need to repli cate the data on the laptop of the rep and in the central database. and Notes provides us with that carehibity

The new customer informati system comprises an Oracle Corp database running on a Unix-based Sun Microsystems, Inc. server. Data is pumped from this server to

A 20-year Xerox veteran and

longtimo operations manager,

Groves replaces Laraine Rodgers, who left Xerox in November to be-

come vice president of information

occessing at Bell Atlantic Corp

During the past few years, the

\$15 billion company has made a se-ries of management shuffles to

better align internal operations

with its customer base. Last

week's reorganization calls for the

a dedicated Notes server that sales reps can access from their potebuok commeters. The note books also include Micrount Corp.'s PowerPoint, Excet and

Word applications. Salespeople will have secess to a broad base of information range ing from sales reports to individual customers' film, camera and processing professors. This date

witt be avaitable under a system siled Pro Payaport Under the new system, the Pro-Present date - collected directly from the customers via question naires and various coupon and rebate programs - will be available

to reas on the Notes server "Access to this kind of data will allow us to clearly identify where significant customers are that an for in the next." Althory said

Rejuctani users The Kodak move is similar to one

under way at archrived Xerco Corp., which is using a sales force automation project to regitalize the own flagging profits [CW 10/31/94], How onickly and easily Kodak's sales rens take advantare of their mobile canabilities on mains to be seen.

Ope of the things that has been n challenge to sales force nutomation so far is that salespeople in general are very rejectant to use technology," noted Hugh Bishop an analyst at Aberdeen Group in Boston. "Training the sales force o use the technology efficiently is just as important as the function ality of the software itself

Neitsche said 18 is addressaur this issue at Kodak by first training salespeople who already fuor tion as resident computer experts a their respective offices. Train ng computer-literate people first

buys as the opportunity to do lost minute tweeks on the sys They can then so back and sell it

### The lowdown on the ESX

ne out next month from Cabletron, the ESX-1320 is a standapped with 12 switched met ports. The 13th rt can be used as either a ds-speed t00M bit/sec.

PDDI port, a 100M bit/sec. ATM TAXI port and a wide-It will incorporate two In tel Corp. 1960 RISC procesuors. The ESX-1320 deliver peregate bandwidth of SOM bit/sec. and through mut of more than 50 900 cket/sec, the sou

said. The switch will also support the Simple Protocol for ATM Networks (SPAN). making it interoperable with all Fore Systems ATM devices as well as the UNI 3.0 and LAN emplation specifi-The ESX-1320 also sup-

ports the following: n Pull-duplex Ethernet ■ integrated Remote Network Monitoring n Distributed LAN Mem

An OC-3 155M bit/sec. ATM interface will be avail able in the second quarter rces mid. The ESX-1200

will cost \$12,995. Also in the offing is a set of modules that will integrate Cabletrue's Spectrum etwork management capa littles into AT&T Corp.'s nge telephone system Spectrum module for The Spectrum module for the ATAT G-3 system, due out in the second quarter, will fet network administr

> data networks from a sing -Loura DiDia and Stephen P. Klatt Jr.

#### Xerox hires new VP, CIO By Jelie Kine

tion of 65 sales districts and 77 service districts into 37 our Xerox Corp. recently promoted Letomer business units. ri Groves to vice president and

As CIO. Groves will oversee sevobjet information officer at its eral systems now being developed newly reorganized U.S. Custo Operations in Rochester, N.Y. support the new business units.

These include a global marketing customer database and n solutions and services database. which Xerox staffers will use as a sort of expert system to solve vari-

Rather than have an acco manager have to relevent a solution to a problem each time it comes up, we're going to have a database of ideas that were used and that worked for other Xerox mannames." Groves said



## airline ...

Macintosh Airline

All the stewards, stewardesses, captains, baggage handlers and ticket agents look the same, act the same and talk the same. Every time you ask questions about details, you are told you don't need to know, don't want to know and that everything will

### he done for you, so just shut up.

How do you

spell that???

Small checkers are not the end-

all for proofing documents.

as we knew well. Some

examples include interesting

replacements for "Virginia," "Pentium" and "Angus" that we cannot print here. If your spell checker has produced

some eye-opening and crazy

Windows Airline The airport terminal is nice and colorful, with friendly stewards and stewardesses, easy acress to the plane and a completely uneventful takeoff ... then, once in the air, the plane blows up without any warning whatsoever! Source Motors - & Guide to the World Wide Web



No more Minesweener

suggestions, send them our For employers looking for a way to limit game playing at work, a new software nackage called **CameCop** monitors active ward If your Item is used, you windows on a PC to see if a game is running. The software, will receive a gift. Sand from Analytic Concepts in San Jose, Calif., provides a customizable message that warns the employee to get back to responses to Tim Opellatte on most it has an entired above to embarrous the user in front of the internet at topol@cu.com

#### Inside Lines

Mail-order maia dies

Mail-order maia dies

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Step away from that printer!
With an eye toward preventing as Intel Printium-eyte PR diseaser.
Herett-Prokate last week issued a recell for 10,000 Office-lot intijoint printers. EP discovered that a fealt in the power supply for the
800 device can cause powerful electric shocks and notified the
U.S. Cossumer Product Stately Commission. "There were no cucoser calls, and so one 'been injerve,' an EF spokerowoma said.

#### Polishing up its image

NHC Technologies, which is busily trying to gain an early lend in the Pentium market, is set to newrap a line of powerful multimedia, Pentium-based systems later this month. According to sources Pertiture based systems later this month. According to score-chool to the company, the new systems will top NRC's Image Per-titim Series, which targets corporate users. The automomentum will include single- and dual-processor configurations based on the 100 MHz Peatium processor and will feature 32-bit PCI local box vides, hardware graphics acceleration, fast video memory and

#### The pace o' progress

The Date G \* Progress'.

President Citton may not be able to get a \$40 million Mercican aid package through Congress, but your PC can appet through Do Mercica. A San Diego for male were strated Mercico Oslinia, an electronic service similar to Cempolerew, according to a Mercico Oslinia syndrome the major may be a service progress, and the service provides mambers, with least groups and data on business archittites south of the border. For a fire a faste of the whole encludinds, log to 16 (15) (16) 467473.

#### Try doing it at night instead

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indicated or actives are saless," attachaseling latarity areas, sonder

director of actives products at Oracle. The company is trying to
replace the "I has with faster Pols."

#### Slipped disks, Armonk-style

Suppress unex5, ATMORX-BAYE Times certainly have changed in the mealurance disk elorage mar-let. Who'd have thought that IDM would ever have to make a point of letting everyone know that it is still top dog, as it do less week in a prese release on shipment levels for its new Ramer RAID servy. But IDM a market share aid for mo 89% to 69% energy to three years, while appater EMC's foomed from 4% to 50%, accord-ing to International Data Corp.

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